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ABSTRACT

The factors which contribute to the successful installation and assimilation of educational innovations were examined in relation to vocational/technical programs in eight post-secondary institutions. About 555 instructors, administrators, and non-teaching professional staff were surveyed regarding the level and extent of use of individualized instruction and the viability of planned institutional change. One campus was selected to evaluate the intervention of an Action Research Team (ART). The 80 instructors showed a somewhat active level of investment in professional activities external to the college; had a tendency to view themselves as having substantial influence on their programs; and were internally-oriented individuals. On a ten-point scale, where high scores indicated favoring individualized instruction, mean scores of all respondents ranged from 5.8 to 8.4. Generally, respondents considered their institutions to be concerned with "achieving uniqueness" and "contributing to society." The schools ranged from those using individualized instruction on a primarily mechanical basis to those using it routinely. Results indicated that certain program areas lent themselves more readily to innovation. The ART intervention was successful in formulating an institutional renewal project. A literature review and bibliography are included and appendices contain a framework for analyzing innovation adaptation and instrumentation used in the study. (ME)

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FINAL REPORT

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INSTALLATION AND ASSIMILATION OF EDUCATIONAL INNOVATIONS IN VOCATIONAL/TECHNICAL PROGRAMS IN POST-SECONDARY INSTITUTIONS

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The conduct of an extensive field research effort by a team external to the organizations studied is never easy. Detailed arrangements have to be made with and through participating institutions. Administrative staffs, faculty, and especially those serving as campus liaison officers to the project have to make room in already crowded schedules for the additional effort which involvement inevitably requires. The NOVA investigators wish to express their deep indebtedness to the nine participating colleges--Amarillo College, Bee County College, College of the Mainland, Grayson County College, Laredo Junior College, St. Philip's College, Texarkana College, Texas Southmost College, and Western Texas College--for the assistance and cooperation given.

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V. H. A.

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INTRODUCTION

Background and Rationale for the Study

Since the passage of the Vocational Education Act of 1963, there has been dramatic growth in occupational-technical [1] programs throughout the country. In Texas, this growth has been particularly evident within post-secondary institutions. As can be seen from the tabular data presented in Table 1, occupational program offerings have risen from 121 programs within 20 post-secondary institutions, enrolling 10,965 in 1963-64, to over 1000 programs offered in 63 colleges or technological institutes, enrolling 93,481 students in 1975 - an almost nine-fold increment in program offerings and student enrollment in a period of little more than a decade. The federal and state funds expended show even greater increment.

Paralleling this growth has been the increasing research and development within the vocational education area. Since August 1969 when he assumed leadership as Director, Educational Programs, Division of Occupational Research and Development for the Texas Education Agency, Dr. Oscar Millican estimates that some 3.6 million dollars has been spent in research and development within the occupational education area (Millican, 1975). An almost equal amount of additional funding requests were received but not funded. These monies have supported research at all educational levels; however, Dr. Millican estimates that the most active arena has been within two-year collegiate institutions. Further, the research supported, outside of survey efforts, has been aimed primarily at developing educational innovations to enhance occupational-technical programs. Relatively little monies have been expended to investigate better means to disseminate and install innovations within the field. The pattern of nationwide funding appears to parallel that in Texas.

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[1] Throughout the proposal the terms "vocational-technical", "occupational-technical", "occupational", and "vocational" are used synonymously.

Table 1

Growth of Post-Secondary Vocational-Technical Education

In the State of Texas Over the Period 1962-75[1], [2]

Fiscal Year	Number of Post-Secondary Schools with Programs	Number of Occupational Programs Offered	Student Enrollment	State and Federal Funds Allocated for Vocational Technical Education
1962-63	17	71	7,298	DNA[3]
1963-64	20	121	10,965	$ 687,539
1964-65	23	171	11,254	4,431,039
1965-66	23	224	19,494	4,956,319
1966-67	31	247	24,215	4,529,689
1967-68	35	341	26,113	4,529,689
1968-69	39	411	28,615	8,634,169
1969-70	39	481	33,778	10,463,095
1970-71	48	577	40,514	11,331,811
1971-72	48	696	49,818	17,962,253
1972-73	49	779	60,743	21,139,507
1973-74	61	973	72,131	37,160,645
1974-75	63	1010	93,418	61,949,741

[1]Tabular data are from unpublished materials provided by Drs. Haynie and Millican, Texas Education Agency.
[2]Some discrepancies exist in the data presented due to slight changes over time in the basis for computation.
[3]Data Not Available.

An implicit assumption underlying research to develop exportable educational innovations in any field tested in a particular setting could be installed with equal success in similar settings. Thus, an individualized instruction package in auto mechanics that succeeds in one community college in Texas should succeed in another Texas community college. It is the intent of this proposal to challenge that assumption. The current investigators, after considerable experience and reflection, believe that an alternate position should be examined. The research evidence and theory pertaining to the "diffusion of innovation" suggests that many variables relating to the characteristics of an innovation, the adopter/proponent, and the institution in which the innovation is to be adopted all serve to influence the successful installation of a promising innovation (Havelock, 1973; Rogers and Shoemaker, 1971; Hefferlin, 1969; Bennis, Benne and Chin, 1969; Lindquist, 1975).

To support R & D efforts while slighting those factors which may contribute importantly to the successful installation and assimilation of an innovation could nullify much of the benefits to occupational education which the research monies were initially granted to promote. The current investigators feel that increased research efforts are needed to further study the installation and assimilation of innovation witnin programs of vocational education. We need to specify which individual and institutional variables and processes aid and which inhibit innovations for educational reform. Such an effort has obvious relevance to the whole range of mushrooming R & D efforts nationwide within vocational education, and in other sectors of post-secondary institutions as well. This research is intended to contribute to the development of "procedures to assess productivity and impact of post-secon-

dary vocational education programs" as specified in the Proposed Criteria (Priorities) for Selection of Applicants.

In discussing the problem with James W. Haynie, Director of the Post-Secondary Division of Occupational Education and Technology, Texas Education Agency, he pointed out:

> In our state and in others, there have been so many educational "flashes-in-the-pan" ideas that seemed promising and were tried in our community college programs, only to find that several years later they had fizzled out. Why, we don't know. It would be of tremendous benefit if, after all the development work, we knew how to successfully introduce and then maintain a new approach; at least until it had had a fair trial (Haynie, 1975).

The present investigators contend that even a well-validated educational innovation is not likely to succeed when the innovator makes unilateral efforts, however vigorous, to install the new approach. The innovator must also consider the readiness of his institution to support the innovation. Successful installation and ultimate retention of an innovation cannot be carried out without active institutional support (Evans and Leppmann, 1967). This proposal will contribute to an understanding of the specific institutional considerations required. As Lindquist (1974) has pointed out:

> "Until recently, research and theory on the innovation process tended to regard a decision to adopt an innovation as adoption itself. Gross et al. found, in contrast, that the clarity of the innovation to implementors, their commitment to it, their abilities to carry it out, adequate material resources, compatibility with existing organizational structures and values, and sustained leadership are key factors in whether or not a decision to innovate actually becomes a change" (p.329).

In a similar vein Rogers (1969), in a unique effort at instituting educational reform in Thailand, points out that one limitation of his extensive study was his failure to adequately consider what he termed "structural effects",

not only of the school system but also of the broader culture in which it was embedded.

Of even greater cogency to the conduct of this research has been the experience of the present investigators in developing and testing educational innovations targeted toward assisting "nontraditional" students in vocational-technical programs within post-secondary institutions (Roueche and Kirk, 1972; Roueche and Kirk, 1973; Mink and Roueche, 1974; Roueche and Appel, 1974). While these studies have strongly supported the efficacy of the innovations described, the investigators recognize limitations to external efforts at reform as a vehicle for the assimilation of the innovations devised. They have also noted the "fall-off" in the administrative and faculty support for an innovation from its testing period to the support available for the reform thereafter. The Hawthorne Effect of involvement in a study may create a very different institutional climate from that which exists after the experimenters have "pulled up stakes".

Even during the period of experimentation an innovation must be supported by the upper-level administration and by the faculty and staff affected by it.

Drawing upon prior experience with three previously tested innovations and their familiarity with a number of Texas community colleges in which installation was attempted, the present investigators decided to study the extent of incorporation of an instructional innovation, individualized instruction, within eight community colleges. The intent was to identify the principal facilitating events and the main blockages experienced in the installation and assimilation of innovation within these colleges.

Some explanation is needed of the rationale for the selection of indi-

vidualized instruction as the instructional innovation selected for study in this project. The choice seemed a logical one. Individualized instruction is perhaps the best known current instructional innovation. The Texas Education Agency, in concert with the Coordinating Board for Higher Education in Texas, for at least the past five years has provided training workshop opportunities in the use of individualized instruction for those interested. Hence, faculty in community colleges desiring to learn about this approach should have had opportunity to acquire entry level competence or at least should have heard about it from others. Knowledge of an innovation is a prerequisite to use. Further, given the increasingly heterogeneous population of students and their increasing number, individualized instruction would seem to be an attractive possibility to an increasingly burdened faculty.

In addition, the investigators attempted to assist in the creation and training of an indigenous, "action-research" team within a single institution. The team was intended to serve as a vehicle for determining the educational needs within the occupational education area, and subsequently for the types of educational reform required. The latter was intended to be a proactive step aimed at installing a mechanism for educational renewal. These efforts are detailed in the section on the Method given below.

Principal and Subordinate Objectives of the Study

There are two principal objectives of the study:

1. To determine from interview, questionnaire and documentary data as well as by direct observation what factors, events or conditions appear to account for the incorporation or resistance to incorporation of individualized instruction within vocational-technical programs in eight selected post-secondary institutions in Texas.

2. To determine whether an indigenous "action-research" team can be created, trained and installed within the occupational educational area of a selected post-secondary institution within a one year period.

Results or Benefits Expected

It is expected that the following benefits would accrue from the proposed study:

1. It will be possible to determine with some objectivity the degree to which individualized instruction has been successfully installed and assimilated within the multiple vocational-technical settings in the Texas community/ junior colleges selected for study.

2. It should be possible to ascertain with reasonable confidence, if there are factors regularly associated with the successful or unsuccessful installation and assimilation of individualized instruction within vocational-technical programs. This has not, to the investigators' knowledge, been examined systematically before. These results will have special significance if substantial unsuccessful installation and assimilation of individualized instruction is found.

3. Other investigators will have guidance regarding the relevant factors needed for the successful installation and assimilation of individualized instruction.

4. While the eighteen months limitation of the length of proposals is too short a period of time within which to realistically expect installation of a vocational-technical innovation, it is long enough to provide preliminary indications of the progress or non-progress of the mechanism whose establishment is being attempted. This is the only study known to the investigators examining the feasibility of planned educational change within vocational education programs in community colleges.

Supporting Documentation: Evidence on Educational Reform at the Post-secondary Level

It comes as no news to faculty and administrators in post-secondary

education that there are within their institutions formidable obstacles to innovation, however meritorious. Most educators can identify with the cliche, "Changing a curriculum is like trying to move a graveyard". The broad scale concern of reform at the collegiate level during the volatile past decade is exemplified in an editorial in the November, 1975 issue of Change Magazine. That editor contends:

> A respectable number of colleges and universities have made serious attempts at reformulating their environments and learning-teaching programs. But few of these efforts have stuck. And little is precisely known about what failed and what succeeded and why . . . . Thousands of hours of reformist talents as well as millions of foundation and federal dollars were spent during the sixties in an attempt to move matters to a higher plateau of collegiate responsiveness and flexibility. But in the thousands of pages of analyses and reform reports the conclusions most often indicate disappointment and disenchantment" (p.11).

There are several extensive studies on educational reform which support the position taken in the editorial. Most of the available research on academic reform has focused on the content of collegiate curricula, the heart of the academic enterprise. Dressel and DeLisle (1969) concluded from a survey of 322 colleges and universities over the decade 1957 to 1967, in which they appraised curricular change:

> The trends substantiated by this study are not great in number and less extensive in nature than one might have expected considering the curricular format of the past decade . . . Despite all the talk about innovation, undergraduate curricular requirements, as a whole, have changed remarkable little in 10 years . . . In many cases, the minor changes in requirements, amounting to no more than a reshuffling of credits, can only by characterized as tinkering, but one can imagine faculties spent many hours on these pointless decisions" (pp. 74-75).

Hefferlin (1969) completed a study of changes in the curricula of a stratified random sample of 110 post-secondary institutions including 10

junior colleges. Over the five year period from 1962 to 1967 he noted an average change of 22.6% of curricular reform for the schools involved, or a 4.1% curricular change per annum. Despite some variability, he noted that the 10 junior colleges averaged only 8% change over the five year period.

In that a portion of this research deals with the means for effectively transmitting the content of curricula, rather than the nature of the curricula itself, the findings of Evans and Leppmann (1967) are even more relevant. They found massive resistance to an attempted introduction of television as an adjunct to college teaching. They have detailed in case study fashion, the difficulties encountered in a single institution, and secondarily in approximately ten others.

In short, there is little contemporary basis for contesting Day's (1946) contention nearly thirty years ago, "It is fair to say, that by and large, academic organization is resistant to change. The status quo tends to root deeply in academic soil" (p.342).

While there appears to be significant concensus about the outcome of collegiate innovation, the processes associated with the resistances encountered are only beginning to be clarified. Furthermore, (Lindquist, 1974) current educational research activity seems primarily concerned with the senior collegiate institutions rather than in two year collegiate settings.

With the current rapid growth of occupational-technical programs, there is ample reason to expect substantial efforts to effect change. This situation underscores the necessity for research studies to investigate the conditions inhibiting and facilitating the incorporation of promising new approaches to occupational-technical education, or what the current investigators have

termed the assimilation of innovation.

Supporting Documentation: Evidence on the Diffusion of Innovation

To provide a broader perspective on the problem, consideration of the literature on the "diffusion of innovation" is necessary. For a number of years, researchers in different fields have been interested in the process of knowledge diffusion. Educators are relative late-comers to the field, and it is popularly conceived that research models by educators and behavioral scientists derive from the early efforts of the United States Agricultural Extension Service. Rogers (1971) has identified seven major research traditions: anthropology, early sociology, rural sociology, education, medical sociology, communication, and marketing. As Rogers points out, a majority of the early educational diffusion studies were carried out at Teachers College, Columbia, under the direction of Paul Mort. Mort and his colleagues first studied the relation between local control of public school finances and school innovativeness (Mort and Cornell, 1938). The considerable body of research of these investigators have been summarized by Rogers and Shoemaker (1971):

1. The best, single predictor of school innovativeness is educational cost per pupil. Wealth appears to be a necessary prerequisite for innovativeness among public schools.

2. A considerable time-lag exists between research and adoption by public schools (Mort, 1953).

3. The pattern of adoption of an educational idea over time approaches an S-shaped curve.

A considerable amount of research has gone into describing the change

orientations and other behavioral characteristics of individuals who are late vs. early adoptors of innovations (Goldstein et. al., 1961; Rogers, 1962; Brien et al., 1965; Carlsen, 1965). The impetus for such research, of course, has been the fairly recent concern for change, change strategies, and the effectiveness of different change agent models. It is logical to assume that people having attributes related to a change orientation are likely candidates for change agentry.

It is more central to this proposal that the adoption process itself has been the focus of considerable research. This research adopts a more inclusive approach, subsuming the earlier approach focusing only on the person.

Rogers posits three key elements in the adoption process: the attributes of the potential innovator (receiver variables), the social system (social system variables), and the innovation (perceived characteristics). Each requires further elaboration.

1. Receiver Variables: Discussion was directed earlier toward this element. Many studies support the view that people amenable to an innovation participate more socially than those who are not (Wilkening, 1952; Suchmen, 1966; Rogers, 1961); other studies demonstrate that such people are more cosmopolitan in their outlook and associations (Beal and Rogers, 1958; Beal, et al., 1967; Coleman, et al., 1966; Carlsen, 1965; Katz and Menzel, 1967). Forty-two studies show that earlier adoptors have a high degree of opinion leadership (Rogers and Shoemaker, 1971).

2. Social System Variables: The social system's norms (modern or traditional, for example) serve as incentives or restraints on the individual's decision regarding innovation adoption. Such system variables as "tolerance for deviance", "characteristics of the setting", and other attri-

butes also affect the nature of the innovation-decision process of the system's members (Rogers and Shoemaker, 1971). Much of the more recent research has focused in this area and will be discussed in greater detail in a later section.

3. Perceived Characteristics of the Innovation: Rogers and Shoemaker (1971) have stated that the perceived attributes of an innovation are critical to its adoption. How a potential adopter views the utility and attractiveness of a new idea is crucial to his further actions. Rogers has proposed five attributes of an innovation:

a. Relative Advantage: The degree to which an innovation is perceived as being better than the idea it supersedes. Several studies have demonstrated that this relative advantage of a new idea is positively related to its rate of adoption (Barnett, 1953; Mansfield, 1968).

b. Compatibility: The degree to which an innovation is perceived as consistent with existing values, past experiences, and needs of receivers. An idea that is incompatible with the salient characteristics of a social system will not be adopted as rapidly as a compatible one.

c. Complexity: The degree to which an innovation is perceived as difficult to understand and use. Studies on this attribute have produced mixed results. Carlsen (1965) found little or no relationship between the complexity of an innovation and its rate of adoption. Kivlin (1960) on the other hand, found that the complexity of farm innovation was more closely related in a negative way to its rate of adoption than any other characteristics except Relative Advantage.

d. Trialability: The degree to which an innovation can be tried on a limited basis. Rogers and Shoemaker (1971) state that "new ideas that can

be tried on the installment plan will generally be adopted more rapidly than innovations that are not divisible. An innovation that is trialable is less risky for the adopter" (p.155). Studies by Fliegel and Kivlin (1966) and Fliegel et al. (1968) support this view.

e. Observability: The degree to which the results of an innovation are visible to others. Rogers and Hanens (1962) found that observability of an innovation is positively related to its rate of adoption. They found that farm innovations, such as chemicals that killed the seeds of weeds and were not visible to neighbors and associates were not adopted as swiftly as those more demonstrable ones.

Elements from the above conceptualization by Rogers (1962, 1971) have been adapted for use in this study. These include the Perceived Characteristics of the Innovation, Characteristics of the Innovator (Actor Variable), and Characteristics of the Setting. This schema will provide the basis for the types of data gathered in examining extent of use of individualized instruction.

In exploring the process of innovation adoption, several investigators have identified specific impediments to innovation. In their study of a system-wide attempt to adopt a differentiated staffing in public schools, Charters and Pellegrin (1972) found twelve factors accounting for difficulties in educational diffusion and adoption of innovation. These were:

1. a fundamental strain between the idealogy of teacher governance and the strategy of directed change.

2. lack of clarity in conceptualization and definition of what the schools are attempting to implement.

3. heavy reliance upon structural change, such as job description, title changes, etc. in the belief that behavior changes will follow.

4. an assumption that a statement of general, abstract program values and objectives will be easily translated into new and appropriate behavior patterns.

5. an unrealistic time perspective, in which massive and far-reaching change is expected to take place in a short period.

6. dissonance between the school district established administrative structure and the temporary system for project management.

7. failure to recognize that teachers have little training and experience in forming and implementing processes and procedures for collaborative decision making.

8. conflict in goals, values and interests in the relationship between central office administration, project managers, and school staff.

9. absence of management and monitoring procedures to assure smooth implementation and flexibility in the face of obstacles.

10. severe role overload among the instructional staff during an innovation attempt.

11. constraints of a time schedule.

12. the assumption that schools need little in the way of additional resources during a change attempt.

Some of these same considerations were identified in a school by being studied, Gross, Giacquinta and Bernstein (1971). They isolated five factors:

1. teachers' lack of clarity about the innovation.

2. teachers' lack of needed capabilities.

3. the unavailability of required instructional materials.

4. incompatability of organizational arrangements with the innovation.

5. lack of staff motivation (as developed after the announcement).

Clearly, there appears to be a serious underestimation of the task involved when a school district attempts to install an innovation, or a limitation of the resources available with which to properly install it. Indeed Gross, Giacquinta and Bernstein (1971) argue that the implementation of organizational innovations is the most critical and unappreciated aspect of the process of successful organizational change.

At the collegiate level, Lindquist offers (1974) seven considerations which he considers "strong barriers to a smooth flow from new ideas to implemented reform" (p.330):

1. Major academic changes threaten secured positions.

2. Colleges and univeristies are vivisected into diverse and isolated sub-groups.

3. Academic power is dispersed among pluristic interest groups.

4. Prevalent academic values oppose much current innovation.

5. Measuring the relative advantages and future context for academic innovation is extremely difficult.

6. Most faculty are isolated from teaching-learning research, theory and practices conducted elsewhere.

7. There are few adaptive mechanisms to fight organizational inertia.

Social System Variables

Research on social system variables affecting degree of use of innovation

has mushroomed in the last decade. This line of research has looked at organizations as social systems and attempted to identify those organizational variables which serve as incentives or constraints on innovation adoption and use. Examining this extensive research one can identify five broad categories of organizational variables. These five categories are: 1) adequate resources, 2) supportive structure, 3) standard of performance, 4) open organizational climate and 5) responsiveness to environment. The research relating to each of these topical areas will be examined in turn.

Adequate Resources

Adequate resources refers to the provision of adequate personnel or material resources available within the organizational setting. Deal, Meyer, and Scott (1974) have identified per student expenditure of funds for instruction, level of external funding, ratio of special administrative personnel to general administrative personnel adequacy of leadership given by school principals, and size of schools within a school district as factors which they found positively associated with the adoption of instructional and organizational innovation within a school district. Other research tends to collaborate these findings. Bennett (1970) examined the extent of innovation adoption within occupational education programs in twenty-three public school districts. While Bennett found local support for occupational education and a general motivation for change within the twenty-three communities represented, the actual degree of innovation adoption possible, as perceived by superintendents, was determined by the superintendent's ability to obtain and effectively utilize resources. The superintendents clearly identified cost factors as the primary obstacle to innovation in occupational education.

Ringer (1968), examining adoption of innovation by forty-five Cooperative Extension Service organizations over a five year period, discovered that the variance in the extent of innovation adoption among the forty-five organizations was significantly influenced by how extensive available personnel and budgetary resources were.

House, et al. (1970) determined that in thirty-four school districts receiving gifted program funds in Illinois the size of the gifted program was significantly associated with the degree of innovation adoption of those programs. Similarly, Baldridge (1974) affirmed that large complex school organizations with heterogeneous environments are more likely to be innovative than small, simple organizations with homogeneous environments. Clearly, adequate personnel and fiscal resources are important prerequisites for innovation across a variety of organizational settings.

Supportive Structure

Many contemporary researchers provide support for the not surprising finding that within an organization a supportive structure, both at a peer and administrative leadership level, constitutes an important ingredient in successful innovation adoption. Howes (1977) stresses the importance of a supportive informal network, and for administrative technical support at mid-management level and psychological support at the top administrative levels. Corwin (1972) identifies "competent, receptive, boundary personnel" as needed assets, along with "functional interdependence" among organizational sub-units with established channels for cooperation. Corwin also reminds the reader that within a school district it is not sufficient that there be a supportive structure within a given school, but that innovation

propensity is also related to the existence of a supportive structure within the "dominant outside organization" (the school district). House et al. (1970) found support for that portion of Rogers model of collective adoption of an innovation which stresses the necessity that the norms of an organization be consistent with the particular school innovation being attempted.

Performance Standards

The third category of variables, performance standards, refers to the existence of adequate systematization or definition within the organization so that the performance of the organization can be appraised. As Havelock (1974) points out in his national study of three hundred and fifty-three representative school district superintendents, there needs to be adequate definition of objectives and goals of school districts. Without it, performance cannot be appraised and the necessary corrective action taken. Havelock thus sees innovations as functional means by which needed corrective action can be implemented. He further identifies systematic planning and mechanisms for group problem solving as important structural components which need to exist if innovations are to be fostered. Ashmore (1977) in a similar vein identifies measurement and evaluation efforts as a primary contributor to the success of Individually Guided Education (an instructional innovation) within the thirty Wisconsin schools he studied. Howes (1977) provides confirming support for the importance of evaluation efforts as found in three separate studies across four organizational settings (elementary schools, school districts, higher educational institutions, and correctional facilities). He stresses the importance of keeping component subgroups within an organization informed of each others activities, providing

feedback on their performance and setting up formal structures for disseminating change information.

Open Organizational Climate

While various terms are used to describe the phenonmenon, open organizational climate refers to qualities or conditions within an organization which foster an openness to free discourse or airing of divergent viewpoints without recrimination consequences. Havelock (1974) stresses the importance of a condition within school districts in which "open advocacy" is possible; that is, where it is possible for a proponent of an innovation to get an adequate hearing for a proposed innovation and where there can be a humane dialogue regarding its merits. In their study of sixteen social welfare organizations, Hage and Aiken (1967) discovered that a high degree of participation by staff members in agency-wide decisions was positively associated with a high rate of program change.

Responsiveness to Environment

This last category of variables describes an organization enriched by communication with and responsiveness to the larger environment of which it is a part. Deal, Meyer, and Scott (1974) emphasized that community attitude toward education emerged as significantly related to innovation at the local school level. In his study on the nature of program development, House (1970) found the development of a new quality program to be dependent on five powerful variables, including the contact of the system with the outside world. These findings lead us to the same conclusion reached by Baldridge (1974) following his research on organizational change. Since environmental variability is a strong factor in promoting innovation, those who wish to

bring about change in educational organizations must open channels of communication and influence between the organization and its environment.

Models for Planned Institutional Change

A final area of the literature on diffusion of innovation requires attention because of its relevance to the fourth component of this study. This literature area is: available models or strategies for planned innovation in education. Lindquist (1974) has concisely synthesized Havelock's (1973) review of the topic:

> "Havelock, in his massive study of over four thousand diffusion studies, many of them in education, summarized three general models of innovation diffusion. One, the research, development and diffusion process (R & D), focuses on the creation and packaging of new products. Major ingredients consistently found in this process are rational planning, a division of labor among researchers, developers, and diffusers, a high initial development cost, and the assumption that the 'potential user' is clearly defined and ready to buy the new programmed text or computer if the pitch is right. A second diffusion model, originating in rural sociology, is called 'social interaction' (S-I). It picks up where R & D leaves off by tracing the communication network and stages by which potential users gain awareness and interest in an innovation, evaluates its relative advantages in a 'trial' stage (study and reflection and/or practical experimentation), and finally adopts or rejects it. Personal contacts, reference groups, proximity of sender and message to user, and opinion leadership are found by researchers to be significant factors in diffusion through a social system. Adoption rate occurs on a normal curve from a few 'innovators' to larger groups of 'early adopters', 'early majority' and 'late majority', then finally to a small number of 'laggards'. The third model focuses not on the origin or flow of innovations but on the need-reduction-cycle within the potential user (individual or organization). This problem-solving (P-S) model emanates from the human-relations division in psychology. Researchers find that the beginning of innovation as far as the user is concerned is a felt need to change. Then the need is diagnosed, as a particular problem, alternative solutions are sought, and action is taken to resolve that problem. Exponents of P-S stress the importance of user 'ownership' of this process. In group situations, collaboration is emphasized in order to spread ownership

> and, therefore, commitment. Finally, Havelock's synthesis of these three models, called 'linkage' combines R & D, S-I and P-S" (p. 327-328).

The investigators are especially interested in the Linkage and P-S model (see Figure 1) in that they seem well suited to the post-secondary educational setting.

The concept of "linkage" has become particularly important in recent literature. For example, Lindquist (1974) stresses that individuals, departments and educational institutions all have "survival needs" to serve. Innovations sought as solutions to survival needs at, say, the institutional level cannot hope to be supported by a faculty member if that same innovation is perceived as antagonistic to his survival needs. Limited communication channels increase the likelihood of this occurring unwittingly. Special efforts are required to compensate for this. One strategy derived out of the P-S model has been the utilization of "action-research" teams. Havelock (1973) defines action research as:

> "An approach which involves the collaboration of university social scientists and school personnel in diagnosing and evaluating existing problems. The use of research methods in collecting and analyzing data from the system benefits the scientist because it provides him with access to field sites and the raw data for later publications. It benefits the school system by providing it with self-evaluation material -- and an increasing knowledge of scientific methods of diagnosis and evaluation" p. 169).

The conduct of action-research by a combined inside-outside team holds promise for accomplishing the "linkage" function. Both Lindquist (1974) and Sikes, Schlesinger and Seashore (1973) incorporate action research within their contemporary intervention schemes.

Thus, while the installation and assimilation of institutional innova-

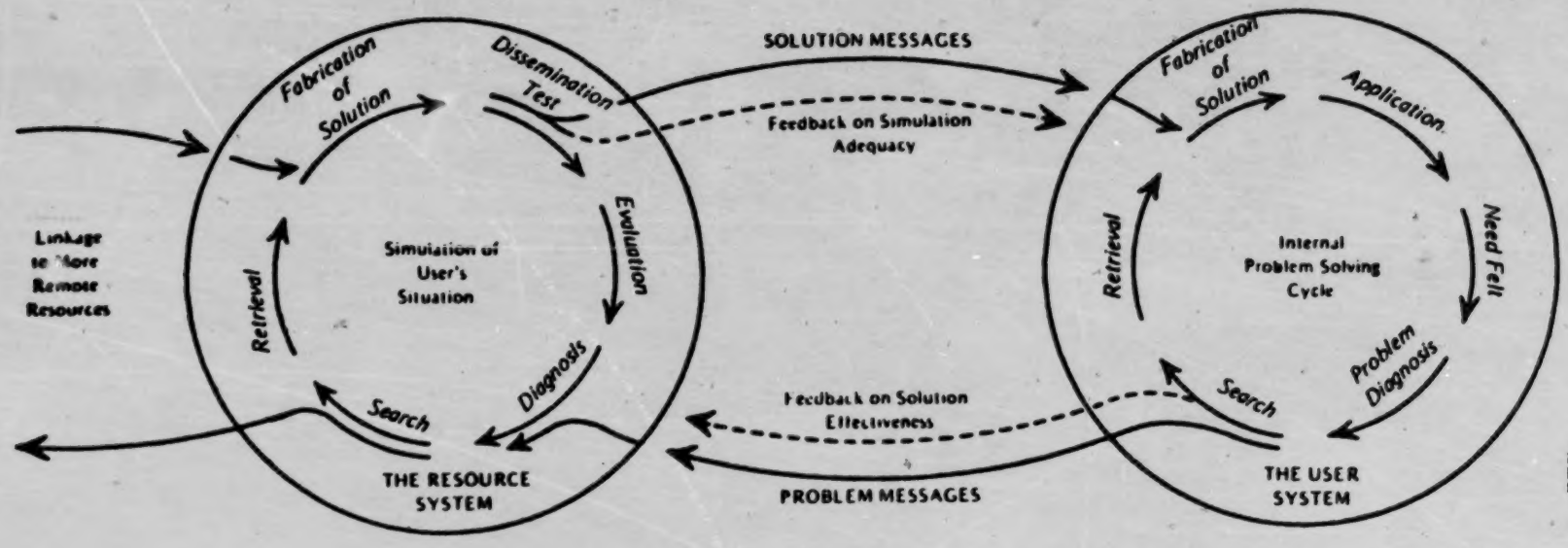

Fig. 1 Paradigm of a Linkage View of Resource-User Problem-Solving.
Havelock, R. G. *The Change Agent's Guide to Innovation in Education.* Englewood Cliffs: Educational Technology Publications, 1973, p. 166.

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tion remains a formidable challenge, we are not using the tools we do have. There is a substantial body of research and theory which could be applied to innovation within vocational-technical education in post-secondary institutions. As Balster (1971) has concluded from his study of change effects in community colleges, generally educators are unaware of theories of change strategies and tactics. The investigators believe the process models of educational innovation provide a fruitful beginning for investigations of innovation adoption, and that their utilization can offer a major contribution to occupational education.

METHOD

Subjects in the Study

In this study the "subjects" were both individuals and community colleges. Eight Texas community colleges were investigated, and within each of them the project focused on the voc-tech division, and particularly upon ten voc-tech faculty, for a total of 80 instructors. From their teaching behavior the project sought to determine the degree to which instructional innovation was occuring, and then to account for that outcome in light of individual instructor and division characteristics. However, since it is difficult to examine influences existent within one component of a college apart from the overall institution, the project looked also at subjective and objective characteristics of the total institution. Perceived community college climate was used as a primary subjective institutional variable, and was determined by the ratings made by other faculty, administrative staff and non-teaching professional personnel. Across all eight schools, some 555 of these secondary subjects took part.

Rationale for the Selection of Target Institutions

The eight target Texas community colleges investigated in this study were the following:

Western Texas College	Bee County College
Texarkana College	Grayson County College
Laredo Junior College	Texas Southmost College
Amarillo College	St. Philip's College

These institutions were selected with the intent that they be a representative cross-section of Texas community colleges having comprehensive voc-tech programs of study; that is, these were to be colleges having offerings in each of the major voc-tech program areas: industrial programs, secretarial practice, business, technical programs, and allied health.[1] To represent these areas, the project selected five specific programs of study: the ones most frequently offered within each of the five program areas. They are as follows:

Program Areas	Target Programs
Industrial Programs	Auto Mechanics or Welding[2]
Secretarial Practice	Secretarial Practice
Business	Mid-Management
Technical Programs	Electronics
Allied Health	Licensed Vocational Nursing

From among those community or junior colleges in Texas offering comprehensive voc-tech programs, the project attempted to identify institutions located in communities of varying size -- from 10,000 to 15,000 and located

[1]The community colleges ultimately selected differed from those originally intended. When the initial plans were found to be unworkable, the rationale described herein was substituted for it.

[2]In this instance both curricula were sometimes used, as both are frequently offered.

in rural settings, through 600,000+ and located in urban, metropolitan centers. It was also intended that gathering a stratified sample based on community size should simultaneously provide community colleges of varying enrollment size.

In an effort to parcel out the effects of size alone, two institutions were selected from each of four ranges of population. These matched schools were located in communities of approximately equal size, having near equal enrollments and comparable budgets. In this way, unless results were found to be common to both institutions, results could not be attributed to size alone. The demographic characteristics of the eight target schools selected are shown in Table 3.

Rationale for the Selection of Target Personnel

The instructor subjects of primary interest were ten faculty members within the voc-tech divisions of each of the eight participating community colleges. Two full-time faculty were randomly selected from among those full-time instructors in the five target program areas identified above. These primary subjects were termed Group I subjects. It was these instructors whose instructional innovation usage/practice the project intended to examine. Secondarily, the project sought input from other faculty, administrators, and professional staff. They served as the source for data on the perceived organizational climate, leadership style, and other perceived institutional characteristics. These secondary subjects were called Group II subjects.

Specifically, the Group II subjects were: 1) all voc-tech faculty other than the ten Group I subjects; 2) every second listed full-time faculty member on a roster of faculty from the academic program area. This was in-

Table 2

Participating Institutions in the Study Matched by Size, Budget and Locale

Colleges Matched on Salient Variables	Population of City or Town	Voc-Tech Programs						Enrollment During 1974-75	Total Budget	V-T Budget	Acad. Budget
		Mid. Mgt.	Voc. Nurs.	Auto Mech.	Weld-ing	Elect.	Sec. Prac.				
Very Small Rural Community (10,000 to 15,000)											
Western Texas College Snyder, Texas	13,850	X	X	X	X[1]	X[1]	X	1,226	2,590,038	471,401	749,995
Bee County College Beeville, Texas	13,811	X	X	X	X	X	X	1,670	2,529,490	926,623	649,775
Small Urban Community (15,000 to 35,000)											
Texarkana College Texarkana, Texas	30,218	X	X	X	X	--	X	2,823	4,010,522	1,391,972	1,250,239
Grayson County College Denison, Texas	22,748	X	X	X	X	X	X	3,854	3,788,938	893,421	906,525
Moderate Urban Community (40,000 to 70,000)											
Laredo Junior College Laredo, Texas	61,500	X	X	X	X	--	X	2,788	8,679,184	739,871	1,240,761
Texas Southmost College Brownsville, Texas	49,500	X	X	X	X	X	X	3,226	6,558,340	792,519	1,151,708

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Table 2, cont.

Participating Institutions in the Study Matched by Size, Budget and Locale

Colleges Matched on Salient Variables	Population of City or Town	Voc-Tech Programs						Enrollment During 1974-75	Total Budget	V-T Budget	Acad. Budget
		Mid. Mgt.	Voc. Nurs.	Auto Mech.	Weld-ing	Elect.	Sec. Prac.				
Large Urban Community (150,000 to 500,000)											
Amarillo College Amarillo, Texas	154,000	X	X	X	X	--	X	4,795	6,852,987	2,354,607	1,414,143
St. Philip's College San Antonio, Texas	587,718	--	X	X	X	X	X	7,444	4,669,758	4,669,758	No Acad. Program

[1]The two faculty members representing industrial programs were sometimes selected from the welding program and sometimes from the electronics program, depending on their availability.

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tended to provide a 50% sample of non-voc-tech faculty; 3) all top level administrators at each college; and 4) a 50% sample of every second listed non-teaching professional level staff person at the college.

In point of fact, it was not possible to obtain all of the desired subjects. Not all those requested to participate chose to take part. The actual subjects in the study from each college as contrasted to a potential subject pool for each college is summarized in Table 3. Out of a possible 80 primary (Group I) subjects, 68 produced usable data. Out of a potential 802 secondary (Group II) subjects, 555 participated, and provided usable data.

Procedures for Gaining the Participation of the Target Colleges

Having identified the target schools, efforts were made to secure their participation. The strategy followed was to contact the president of each of the identified institutions and solicit his/her agreement to permit the conduct of the research on that campus. This initial telephone solicitation was followed up by an extended letter which described the total requirements of the research and the demands it would place on the institution. Contact was made by a former community college president currently on the faculty of the Department of Educational Administration at the University of Texas at Austin who had already established relationships with each of the presidents concerned. As a result of these efforts some 16 community colleges in Texas were solicited with final consent being obtained from eight of that group.

Procedures for Gaining the Participation of Target Subjects

Selection of the instructor subjects for the study entailed use of the following procedure:

Group I: The contact person at each school was asked to identify all

Table 3

Composition of the Research Sample

Community College	Estimated College Enrollment	Group I Selected Voc-Tech Faculty		Group II Other Voc-Tech Faculty		Group II College Administrators		Group II Academic Faculty		Group II Other Professional Personnel		Group II Other Personnel		Total Group	
		Possible	Actual	Possible	Actual	Possible	Actual	Possible	Actual	Possible	Actual	Possible	Actual	Possible	Actual
Western Texas	1,186	10	7	7	7	8	8	16	10	6	6	-[2]	2	49	40
Bee County	2,023	10	10	21	21	9	8	20	17	11	9	-	2	73	67
Texarkana	3,586	10	9	44	18	7	5	34	23	8	8	-	1	104	64
Grayson	3,781	10	7	24	10	5	2	28	13	4	4	-	0	71	36
Laredo	3,480	10	8	35	10	10	9	29	20	23	7	-	0	107	54
Texas Southmost	4,019	10	9	42	36	15	14	37	34	27	27	-	7	138	127
Amarillo	4,656[1]	10	8	82	29	9	3	36	34	28	11	-	0	165	85
St. Phillip's	6,967	10	10	45	45	5	2	20	20	13	5	-	2	95	82
Totals	29,698	80	68	300	176	68	51	220	171	120	77	-	14	802	555

[1]Combined enrollment for both the Main and West campuses which are 4,127 and 529 respectively.
[2]A precise count of this group is not available.

full-time teaching faculty in each of the five voc-tech programs of interest. Through a "draw-the-name-out-of-the-hat" procedure, the contact person selected two persons from among the identified faculty from each representative program. The contact person then contacted those individuals and requested their participation. These subjects were advised that participation in the study would require between two and two and a half hours of their time, including a 30-40 minute interview relative to their instructional practices and between an hour and fifteen minutes to one hour and forty-five minutes for completion of questionnaire materials.

Group II: The contact person selected every second named, full-time faculty professional level staff member outside the voc-tech division from a roster of current staff and requested their participation. In addition he sought participation of all of the top level (deans and vice-presidents) college administrators, including the institution's president. Each individual was requested to attend one of several group meetings of not more than one hour's duration, at which time they would be asked to complete questionnaire materials focusing on their perceptions and reaction to the institution.

Thus, Group II personnel were intended to be the data source for the subjective institutional variables and Group I was intended to provide the person (innovation user) data and the data on perceived characteristics of the individualized instruction innovation.

Overview of the Project

This project, termed the Nova Project (InNOVAtion), was conducted over an eighteen-month period, July 1, 1976 to December 31, 1977. In reality, this study was composed on two discrete components. One of these was in-

intended to determine the degree of use of individualized instruction within the vocational-technical divisions of eight Texas community colleges by each of two instructors from the five principal programs within the University of Texas divisions. In addition, other assessments of the University of Texas divisions and of the college of which it was a part was assessed by other faculty, administrators and non-teaching professional personnel.

The second component dealt with the installation of an Action Research Team (ART) within a ninth Texas community college. The ART was intended to serve as a mechanism for testing out the viability of planned institutional change. The nature of the institutional change attempted was to evolve from the ART's efforts.

The Independent and Dependent Variables in the Comparative Study of Eight Community Colleges

In this study, there were over 80 independent variables and two dependent variables to be examined. The independent variables served as predictors and the dependent variables as criterion variables in two separate multiple regression analyses. Because each of these variables emerged from responses made to multiple questionnaire or interview instruments, a description of the component subscores and total scores found on those instruments represents a description of the variables themselves. To avoid redundancy, the critical variables of this study and the customary section on instrumentation will be combined and described in the single section that follows.

The Dependent Variables

The dependent variables for the study were "Level of Use" and "Extent

of Use" of individualized instruction, as measured by Level of Use (LoU) focused interview and the Personalized Systematic Instruction Inventory (PSII), respectively. Each will be described in turn.

Level of Use (LoU): It has been shown that "innovation adoption is a process rather than a decision point - a process that each innovation user experiences individually" (Loucks, Newlove and Hall, 1976). Investigators at the University of Texas Research and Development Center for Teacher Education have developed a Concerns Based Adoption Model (CBAM) to describe this process in which "each user of the innovation demonstrates successively higher qualities of use of the innovation" (Loucks, Newlove and Hall, 1976). The CBAM examines two dimensions affecting innovation adoption: Stages of Concern about the innovation (SoC) and Levels of Use of the innovation (LoU). The SoC instrument deals with the feelings, thoughts, and information needs of the innovation user. This instrument was used in the present study as one measure of actor (user) variables and will be discussed later. The other dimension of the CBAM, LoU, describes the behavior of individual users as they acquire knowledge of and skill in use of an innovation. LoU is conceptualized as seven stages or levels of use, starting with the user having no knowledge of the innovation at Stage 0, initial orientation at Stage I and proceeding to reevaluation and adoptation of the innovation at Stage VI. At each stage the user's behavior is examined across seven component areas including knowledge, acquiring information, sharing, assessing, planning, status reporting, and performing. (See Appendix A for description of each of the component areas at each stage.) The LoU model was selected because it provided a much more refined and precise means of

assessing the degree of involvement with the innovation than a simple "go, no-go" basis for judging whether a faculty member was a user.

The LoU index was obtained through an interviewing procedure developed by Loucks, Newlove, and Hall (1976) of the University of Texas Research and Development Center for Teacher Education. The LoU interview is a focused interview which allows the respondent to follow a natural train of thought. The format for the interview is given in Appendix A. A consequence of this focused format is the necessity for interviewer training. Five members of the NOVA staff participated in approximately ten hours of training conducted by Beullah Newlove, CBAM staff member and Dr. Gene Hall, CBAM Project Director. Nova staff, Dr. Victor Appel, Dr. Oscar Mink, Mr. Jerry Snow, Mr. John Ehrfurth and Mr. Colin Shaw (All Research associates on the project) participated in training. They subsequently served as interviewers or raters of the LoU interviews.

The training procedure followed five steps. First, the staff reviewed the rationale for CBAM and became familiar with the seven stages. Next, they were given practice exercises to help them identify user responses which were prototypic examples of each stage. To assist them in grasping how LoU interviews are actually conducted, the staff members then listened to tapes of sample LoU interviews conducted by experienced CBAM personnel. The fourth stage of training consisted of opportunities to role play LoU interviews with one another and with two individuals outside the staff who were involved in innovative activity. As a final test of mastery of the LoU procedure, all four NOVA staff participants were required to listen to and rate six representative LoU interviews previously conducted by

CBAM staff members. Each of the four had to demonstrate competency in rating and the NOVA staff overall had to achieve adequate interrater reliability (at least .80). The staff members did achieve the criterion level of mastery.

As used in this study, the LoU interviews were held with the Group I subjects from the five representative voc-tech programs in each college. The mean LoU rating for respondents at each of the participating community colleges was used as the index of LoU for the institution.

Personalized Systematic Instruction Inventory (PSII): The Personalized Systematic Instruction Inventory (PSII), devised by Washburn and Herrscher (1974), measures the extent to which an individual instructor is engaging in the teaching behaviors represented in individualized instruction. The PSII is based on a composite definition of individualized instruction taken from the writings of Ralph Tyler (1950), James Popham (1970), and Gerrold Kemp (1971). For copies of this and other instruments used, see Appendix B.

The authors attempted to incorporate into the instrument component elements which would make for a systematic approach to individualzied instruction. The basic elements of this model are as follows: 1) Rationale, 2) Specific Instructional Objectives, 3) Pre-Assessment, 4) Learning Activities, 5) Post-Assessment, and 6) Revision. The instrument may be considered a "content" approach to defining the extent of use of individualized instruction. That is, the instrument seeks to determine the extent to which a given instructor uses those elements of individualized instruction which would be present if individualized instruction were comprehensively practiced.

The PSII was used as one of two criterion variables in the present study. Instructors at the eight community colleges were asked to respond to ninety statements using a six point scale, ranging from 0 - not at all, to 5 - to a very great extent. The PSII yields ten factor scores and a total score. The higher the score on each factor and the overall total score, the more the instructor is engaged in teaching behaviors associated with individualized instruction. The ten factors are described below.

Factor I: Self-Pacing Feature: The first factor deals with an instructor's willingness to accommodate to a student's previous learning experiences and learning rate. Such items as "Students are tested on necessary prerequisite knowledge and skills and are provided materials and instruction necessary to remedy deficiencies," and "If necessary, students may spend at least a year studying a semester's course." contribute to this factor. On Factor I scores range from 0 to 100. A high score indicates that instructors allow their students a high degree of freedom to do self-pacing.

Factor II: Relevance: The second factor assesses to what degree students are aware of course objectives and have involvement in determining and achieving those objectives. This factor includes items such as, "After consultation with students, behaviorally stated end-of-course (terminal) objectives are communicated in writing to the students." Possible scores on Factor II range from 0 to 35.

Factor III: Learning Climate: Factor III indicates the degree to which students are given a choice of learning strategies and are provided with immediate and accurate feedback. Sample items include, "More than

fifty percent of the course objectives have two or more learning activities - e.g., lectures, readings, slide/tape presentations - available to the students to aid them in mastering course objectives." Scores on Factor III can range from 0 to 35.

Factor IV: Instructor Provides Supportive Climate: Factor IV deals with the degree to which the design and content of a course are relevant to, or supportive of, the personal needs and goals of students in it. This factor includes such items as, "Effort is made to assist students in relating course content to future student goals and interests, such as careers." Scores on Factor IV range from 0 to 35.

Factor V: Student Personhood Development: Factor V assesses ways in which the institution and the individual instructor facilitate a positive self-concept in each student. Items contributing to this factor include, "Students may enroll in a separate course on 'How to Study'", and "I encourage my students to believe that success is more a result of hard work than good luck." Since thirteen items contribute to this factor, scores can range from 0 to 65.

Factor VI: Course Design and Revision: Factor VI indicates the extent to which instructors encourage student feedback related to the development of course content and instructional method. Sample items include, "Student input of topics for subject content is included in the course design." and "Information is gathered on the student's opinion of the methods of instruction employed in the course which is used in revising instructional activities." The possible range of scores for Factor VI is 0 to 40.

Factor VII: Flexible Progress: Factor VII deals with the extent to which an instructor is willing to design learning activities that are appropriate for a student's level of competency, provide for active participation by students, and allow time for mastery of a topic. "The learning activities are sequenced from simple to complex." is one item contributing to this factor. Scores can range from 0 to 25.

Factor VIII: Student Contracts: Factor VIII assesses the extent to which students are allowed to contract for course achievement level. For example, one item states, "The student is able to contract for the grade for which he wishes to strive, e.g., A,B, or C." Seven items contribute to this factor, making possible scores ranging from 0 to 35.

Factor IX: Student Learning Styles: Factor IX reveals the degree to which variation is possible in the amount and type of student involvement with course content. It indicates whether differential levels of learning outcomes (comprehension, application synthesis) are possible. Sample items include, "At least fifty percent of the specific course objectives in the cognitive domain involve more than student comprehension of subject content, e.g., interpretation, extrapolation, application, analysis, synthesis, and evaluation," and "Students may determine when, where, and how to use the instructional materials." The possible range of scores for Factor IX is 0 to 35.

Factor X: Faculty Self-Image: Factor X assesses the ways in which an instructor defines his/her role in the learning environment based on the roles s/he deems appropriate to assume. Sample items include, "As an instructor I am a diagnostician" and "As an instructor I am a motivator." On

this factor scores can range from 0 to 50.

Total Score: The total score simply represents the combined factor scores on the PSII. As might be expected,a high total score indicates typically high scores on each component factors, while a low total score reflects generally low scores on component factors. Total scores range from 0 to 445.

The Independent Variables

The 84 independent variables in the comparative study were of four types contained within seven questionnaire instruments. The four types of variables were: 1) Measures of actor (innovation user) variables, 2) Measures of the perceived characteristics of the innovation, 3) Measures of perceived institutional variables and 4) A measure of objective institutional variables. The variables within each of these four categories will be described in the context of the seven instruments from which they were assessed.

Actor Variables: The 39 actor variables were assessed within a Background Information Form (BIF), the Adult Nowicki-Strickland Internality-Externality (ANSIE) Scale, and the Stages of Concern Questionnaire.

Background Information Form (BIF): The Background Information Form appraised demographic characteristics of the innovation user (e.g., sex, race, etc.), educational background, teaching experience, and current teaching status (length of service at the college, program in which teaching is performed), and number of students taught. In addition, the BIF evaluated the perceived status of the respondents' teaching discipline or area, extent of professional involvement, and the degree of cosmopoliteness of the actors as inferred from the extent of the actors' professional activities and out-

side contacts. The instrument also assessed the self-perceived influence of each respondent in significant decision-making and the extent of Opinion Leadership enjoyed by him/her. All of these and the other actor variables were evaluated in order to determine the extent to which innovation usage was related to individual characteristics of the actor himself.

Adult Nowicki-Strickland Internality-Externality (ANSIE) Scale: This locus of control measure was the single personality measure examined. Locus of control was hypothesized to be a potent predictor of innovation usage on the basis of related research findings. The ANSIE was developed from the Children's Nowicki-Strickland Internal-External Scale (Nowicki and Duke, 1973). It is a self report measure which consists of 40 items answered either yes or no. An individual's score equals the number of external items answered yes. Research with the ANSIE shows that it overcomes some of the problems of the Rotter scale, such as social desirability and denial of psychopathology (Christner, 1974). Nevertheless, it compares favorably with the Rotter scale on validity and reliability. It has the additional advantage that it serves as a measure of success expectancy as well as control expectancy.

Stages of Concern (SoC) Questionnaire: The Stages of Concern Questionnaire was developed as a part of the Concerns Based Adoption Model (Loucks, Newlove and Hall, 1976). In that model it is postulated that potential adopters of an innovation are at varying stages of readiness with respect to their degree of concern with the innovation. An individual is deemed to be "concerned" when s/he devotes time, energy, and thought to matters related to an innovation. The stages of concern represent

a developmental sequence in which the concerns of an innovation user are postulated to move along a hierarchy from not being aware of a particular innovation to refocusing on more universal benefits which might accrue from the innovation. Scores at each stage reflect the amount of involvement with an innovation. A low score reflects a low level of concern; a high score suggests high involvement with the innovation. The SoC questionnaire yields scores for seven component stages of concern and an overall concern score. The questionnaire is composed of 35 items, with five items contributing to each stage. A respondent rates each item on an eight point scale ranging from zero ("This statement seems irrelevant to me.") to seven ("This statement is very true of me at this time.") Therefore, scores on each stage can range from zero to 35 and the overall score can range from zero to 245.

Stage 0 - Awareness: Scores at this stage reflect users' degree of familiarity with an innovation.

Stage 1 - Informational: Scores at this stage indicate a degree of interest in learning more detail about an innovation. High scorers are interested in acquiring substantive facts about an innovation such as general characteristics, effects and requirements for use.

Stage 2 - Personal: Scores at this stage indicate users' degree of certainty about the demands of an innovation and his/her personal role in its implementation.

Stage 3 - Management: Scores at this stage reflect users' degree of concern about issues of efficiency, organizing, managing and scheduling of the innovation.

Stage 4 - Consequence: Scores in this stage indicate user's perceptions of the extent of the impact of an innovation on his/her students.

Stage 5 - Collaboration: Scores on this stage indicate a user's degree of concern about coordination and cooperation with colleagues at this stage.

Stage 6 - Refocusing: Scores on this stage indicate a user's degree of concern about further possible benefits, alternative uses, or possible changes in the form of the innovation.

The Characteristics of the Innovation: The Characteristics of the innovation was the second of the four types of independent variables examined. For this purpose, the Characteristics of the Innovation Questionnaire was used.

Characteristics of the Innovation Questionnaire (CIQ): The Characteristics of the Innovation Questionnaire asks each individual user to assess his/her perceptions of individualized instruction in terms of six attributes. The questionnaire assumes that subjects at the eight colleges hold basically the same definition of individualized instruction, while realizing that its implementation differs somewhat across colleges. Subjects are asked to rate individualized instruction on each of the six dimensions.

On the dimension of Relative Advantage, subjects are asked how much more or less useful they see individualized instruction as compared with other instructional methods. Ratings for this and the other attributes range from 1 - a low rating for the attribute in question, to 10 - a high rating.

The second characteristic, Compatibility, deals with how compatible

the user sees individualized instruction to be with his/her own personal values, beliefs, attitudes, and past experiences.

The third characteristic, Difficulty, asks to what extent respondents see individualized instruction as being difficult to understand and use.

The characteristic of Trialability Over Time, a fourth attribute, refers to the degree to which individualized instruction lends itself to trial use for a limited time as opposed to requiring an extended trial.

A fifth attribute is Trialability Across Instructors. A rating of 1 indicates the perception that individualized instruction lends itself to a demonstration trial by one instructor while a rating of 10 indicates a required demonstration trial by all instructors.

The last characteristic assessed is that of Observability. A rating of 10 assumes very highly visible and apparent effects or outcomes which result from the use of individualized instruction.

Subjective Institutional Variables: The subjective institutional variables were the third of the four types of independent variables assessed. This class of variables along with the objective institutional characteristics served as the means by which situational influences on the degree of innovation adoption and use were appraised. Two measures were used for this purpose: 1) The Organizational Growth Stages Questionnaire and 2) The Survey of Community College Organizational Functioning.

The Organizational Growth Stages Questionnaire: Both the Stages of Concern, postulated within the Concerns Questionnaire, and the LoU posit a developmental sequence for the individual which is predictive of

his/her involvement with innovation. A person at a later developmental stage on the Concerns Questionnaire would be expected to be at a higher LoU stage relative to his/her involvement with an innovation than would a person at a lower stage. In an analogous fashion, the NOVA project hypothesized that there are also stages of development for a community college or for any organization, and that the stage of development of that organization will differentially predispose individuals in it toward the use or nonuse of an innovation. Specifically, the further along an organization is in its "life-cycle" the more likely it is that individuals within it will engage in innovative behavior. In an effort to test this hypthesis, each of the eight participating community colleges was evaluated using an instrument devised by the Nova Project, termed the Organizational Growth Stages questionnaire (OGS). This instrument is based on the five organizational growth stages posited by Lippitt (1969). Each of these five stages and the corresponding issues associated with each of those stages are:

Stages	Characteristic Issue or Problem Requiring Resolution
1. Survival	1. Concern with securing adequate students, staff, resources and programs
2. Stability	2. Coping with crisis-dominated issues without being overly reactive
3. Gaining Reputation	3. Recruiting and holding quality personnel, engaging in appropriate image-building activities
4. Achieving Uniqueness	4. Focusing energies toward achieving targeted goals and promoting cooperative rather than competitive attitudes toward their attainment
5. Making a Contribution	5. Maintaining public confidence and respect and adequate levels of funding

The Organizational Growth Stages (OGS) questionnaire sought to identify the stage at which a given institution was by pooling perceptions of respondents from each of the participating colleges regarding the level of development of their institution. The OGS questionnaire inquired into the applicability of descriptive statements or problems (issues) from which the institution's stage of development might be inferred. Three sets of data are assessed, two pertaining to stage-appropriate descriptions, and one descriptive of issues currently being confronted. On the basis of these three sets of data, a judgement can be made regarding the overall organizational stage which the college has attained.

Survey of Community College Organizational Functioning (SOCCOF): The SOCCOF is adapted from the Survey of Organizations (Taylor and Bowers, 1972), an organizational climate measure developed by the Institute of Social Research, Ann Arbor, Michigan. The Survey of Organizations was adapted in order to make it directly applicable to one particular type of organization, community colleges. The adaptation involved altering terminology and also adding sections to the original instrument to tap optimally desired characteristics as well as actual descriptions of the current status of each community college setting. The revised instrument contains 136 items evaluated on a five-point Likert type scale, assessing the degree of applicability of the items.

On the basis of a factor analysis of the instrument, four factors emerged. The four factors were used as subscales of the instrument, and scores for each were derived. The four subscales were termed: Satisfaction with College and Job, Supervisory Leadership, Team Collaboration, and

Organizational Constraints on Efficient Functioning. Satisfaction with College and Job refers to the relative degree of satisfaction with one's collegiate setting as felt by each respondent. Supervisory Leadership pertains to the assessment made by subordinates of the quality of leadership provided by those in supervisory roles. Team Collaboration refers to the degree to which respondents perceived faculty and staff as working collaboratively as a team. Finally, Organizational Constraints on Efficient Functioning refers to the amount of "red tape" or other bureaucratic impediments respondents felt existed within the organizational structure of their college.

Objective Institutional Variables: The Objective Institutional Characteristics (OIC) questionnaire provided the data for the fourth group of independent variables examined. This category of variables refers to objective attributes of a college such as its size, financial resources, variety of programs offered, and the like. These characteristics were elicited by the OIC questionnaire from the 33 objective collegiate variables examined by Astin (1962) as having potential to discriminate among a wide variety of post-secondary institutions. These 33 variables were found by Astin, in a factor analysis, to represent five basic factors: Affluence, Size Masculinity, Homogeneity, and Realistic vs. Technical emphasis. Representative variables from four out of five applicable factors were selected for use in the OIC questionnaire. In addition, another variable reflective of growth rate was added. The data were sought from the Director of Institutional Research, Director of Admissions, or other administrator responsible for the maintenance of such data.

Hypotheses/Research Questions Examined in the Comparative Study

In this study no formal hypotheses were tested. Rather, the investigators

simply sought to ascertain which among the more than 80 predictor variables were found to be significant predictors of each of the two criterion meausres, LoU and PSII. Those variables found to account for the greatest variance in the criterion measures could then be considered as characteristics associatively if not causally related to the adoption and use of individualized instruction.

Data Analysis for the Comparative Study

The questionnaire data were prepared for computer processing using computer programs from the library of programs contained in Statistical Package for the Social Sciences (1970). Initially, distribution statistics for each variable were computed. Analysis of Variance comparisons of score differences across schools and across the five programs on interest were conducted on the dependent measures and on key independent measures. The principal data analysis was a multiple linear regression analysis in which all of the predictor variables were used to predict first the PSII criterion measure, and then the LoU measure. Statistically significant and psychologically meaningful intercorrelations within the data were identified.

Methodology for the Action Research Team Study

The attempt to install an Action Research Team (ART) at a target community college was essentially a single case effort. The methodology employed to study the process which occured can best be described as a case study approach. One member of the Nova Project Team, Ms. Nora Comstock, Research Associate, served as a participant-observer of the process as it took place over a 12 month period from January, 1977 to December, 1977. For five months of this period, January through June, 1977, she was in residence at the college. Ms. Comstock's role as a participant-observer of the ART gave her full access

to observe the work of the ART; however, she sought not to influence the substantive directions taken by the team. Her task was simply to serve as a process recorder of what transpired. After her departure, reports of what occurred were obtained from one of the team members. Ms. Comstock was assisted by Dr. Oscar G. Mink, Project Director, who served as a consultant to the ART, and who instructed the team in appropriate ART procedures. He was also instrumental in gaining the consent of the College of the Mainland initially in participating in the study. (See Appendix C for Progress Report.)

The College of the Mainland was selected as the target institution because of the high regard in which that community college is held, its previous superior record of receptivity to innovation, and its participation in other research efforts with which the investigators have been associated. Thus, entry into that system could be made with greater ease than with a college unfamiliar with the investigators.

The ART itself was initially composed of nine faculty, administrators, and staff members who responded to a college-wide invitation to participate. Subsequently, additions and deletions from that group altered its composition. A major change occurred in August, 1977, when a second formal call for volunteer participants yielded an additional five members of the team. This brought the total number of ART members to 14.

The team met periodically throughout the 12 month period and charted its own course. Their only directive was that the team was to concern itself with constructive organizational change. Thus, the ART was free to define the problem area(s) it desired to impact, and then to select means for addressing that (those) concerns.

It is important to stress that the research interest of the Nova Project was primarily a process one. The Nova Project sought to determine whether or not an ART could be established, and if established, to what degree such a team could formulate meaningful goals related to planned institutional change, and then devise means for their implementation. The Nova Project will be interested in the ultimate success of the ART's efforts, but does not expect that the 12 month period will provide sufficient time for the ART's efforts to come to fruition. Thus, the evaluation intended is primarily formative rather than summative. The formative evaluation results are described in the latter portion of the Results chapter. These results are intended to augment rather than duplicate an earlier process description provided in the Nova Project Annual Report (Appel, Roueche, and Mink, 1977).

RESULTS

In presenting the results of this study, distribution statistics for the key predictor variables and for the two criterion variables will be given and commented upon first. Then the results obtained when the 84 predictor variables were analyzed in a multiple regression analysis to predict first LoU and then PSII Total Scores will be examined. These predictor variables include Actor Variables, Characteristics of Innovation ratings, and Subjective Institutional Characteristics. The Objective Institutional Characteristics data had to be omitted due to incomplete availability of the data.

Actor Variables

Historically, prediction of behavior has been presumed to be a function of demographic, attitudinal, or personality attributes of the individual.

While this study posited that situational or environmental variables may also be influential, person variables were examined. The investigators sought to determine which variables might discriminate those instructors most likely to engage in high levels of use of the instructional innovation, individualized instruction. Originally, it was intended that the data be gathered from 80 vocational-technical instructors. Due to difficulties in scheduling and declinations, actually only 67 of these instructors participated in the study. Slight additional shrinkage occurred on certain variables due to missing data or data which could not be interpreted.

Of particular interest to the project was the degree to which the Group I subjects (vocational-technical instructors) possessed attributes of leadership and what Rogers and Shoemaker (1971) have termed Cosmopoliteness. As indicated earlier, cosmopoliteness refers to the degree to which an individual faculty member is invested in professional activities external to his collegiate institution, as opposed to involvements intrinsic to his setting. Cosmopolite instructors are likely, because of external professional activities and contacts, to be aware of innovations sooner, and more likely than others to incorporate them into their instructional procedures. As indicated by the data given in Table 4, the Group I subjects were generally well established in their professions. While they tended to have five years or less experience at their particular college, the voc-tech instructors at all schools averaged almost eight years of total teaching experience, and over twelve years of actual on-the-job experience within their fields. In addition they tended to have at least baccalaureate level training and in most cases, Master's level educational preparation. Thus, they were persons highly knowledgeable within their program

Table 4

Educational and Professional Background
Of Group I Subjects (Voc-Tech Instructors)

Community College	Years Worked at Current College Setting		Total No. of Years Teaching Experience		Years of On-the-job Experience Other Than College Experience		Level of Education Attained		No. of Workshops, conferences, meetings on Indiv. Instruction Attended		No. of Professional Organizations to which One Belongs		No. of Professional Organizations in which One Holds an Office	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mode		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Western Texas	2.29	1.97	4.00	1.29	8.83	4.87	MA/MS		4.33	2.50	3.20	.84	.00	.00
Bee County	5.10	3.57	8.90	5.93	15.00	9.37	BA/BS		6.00	2.94	2.25	1.03	.30	.00
Texarkana	3.50	1.51	8.22	8.45	10.89	6.83	MA/MS		5.33	3.24	2.37	2.07	.33	.58
Grayson	4.20	2.39	10.40	14.03	15.20	11.45	MA/MS		6.20	3.03	2.25	1.26	.25	.00
Laredo	4.40	2.55	6.30	5.46	8.33	7.03	BA/BS		6.40	1.65	2.37	1.18	.10	.71
Texas Southmost	5.33	3.00	8.22	4.41	15.87	8.10	BA/BS		5.22	2.95	2.12	1.36	.22	.00
Amarillo	6.67	2.80	9.17	3.54	11.83	10.05	MA/MS		6.67	1.75	3.20	1.30	.50	.00
St. Philip's	5.60	2.84	8.40	4.40	10.43	7.72	MA/MS		6.10	2.02	3.55	1.51	.30	.71
All Colleges	4.70	2.80	7.84	6.20	12.35	8.18	MA/MS		5.73	2.49	2.55	1.45	.25	.25

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areas. Further, they tended, on the average, to have had prior exposure to individualized instruction via five workshops and conferences.

When the instructors were compared on indices thought to be reflective of Cosmopoliteness, as shown in Tables 4 and 5, there was a relatively high degree of uniformity found across colleges. On indices such as number of professional organizations, number of professional journals one regularly reads, and the like, relatively little differentiation was found. On the average, Group I subjects were somewhat, but not highly, active on all of the indices used.

Special attention was also paid to the perceptions the instructors had of their program of study and their attributions regarding others' views. As can be seen from the data given in Table 6, there was, again, relatively little variability found across the eight institutions. All tended to regard their programs relatively highly, but to impute to others somewhat less high regard or appreciation of their program area. The instructors also tended to view themselves as having substantial say or influence in what transpired within their program, though that influence was shared to a substantial degree with higher level administration. Relatively more variability in these latter results can be seen.

Because innovation adoption and use was conceptualized as behavior most likely to characterize relatively independent and autonomously functioning individuals, the Group I subjects were administered the Adult Nowicki-Strickland Internality-Externality Scale (ANSIE), an instrument that might tap that orientation. The results obtained are summarized in Table 7. As can be seen from these results, relatively little variability in mean results was found across the eight colleges. On the average, all colleges emerged with scores

Table 5

Professional Development Efforts of Group I Subjects

Community College	No. of Professional Journals which One Regularly Reads		Hours per Week Spent in Voluntary Reading		No. of Publications, Papers or Presentations Given in Last 3 Years		No. of Colleagues at Other Schools With Which One Corresponds		No. of Colleagues at Own School with Whom One Discusses Professional Issues		No. of Professional Contacts Initiated in the Last 3 Years	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Western Texas	4.71	2.81	3.71	.76	2.29	1.50	3.00	2.16	3.71	.95	2.86	1.86
Bee County	1.89	.78	3.40	1.07	2.50	1.85	4.10	1.73	4.40	1.58	3.80	1.99
Texarkana	4.00	3.38	3.44	1.01	2.37	.92	3.89	2.03	4.11	1.45	3.55	2.35
Grayson	2.80	1.30	3.20	.84	3.00	1.00	3.00	1.58	4.20	.84	2.00	1.41
Laredo	2.33	1.50	3.50	1.58	3.10	1.79	3.30	1.95	4.60	.84	3.80	1.62
Texas Southmost	3.11	1.05	3.66	1.00	2.56	1.94	3.33	2.00	3.78	.83	3.22	1.56
Amarillo	4.67	2.73	4.00	1.26	4.33	1.75	4.00	.89	5.17	1.60	4.67	1.37
St. Philip's	3.38	1.85	3.50	.85	1.90	1.29	3.90	1.45	4.30	1.25	3.60	1.50
All Colleges	3.10	2.09	3.60	1.04	2.63	1.61	3.55	1.75	4.30	1.25	3.43	1.79

Table 6

Perceptions of Self and Others' Influence
in One's Program of Study for Group I Subjects

Community College	How Highly One Values Own Program (1= Not at all 5= Very Highly)		How Highly Others in One's Division Value One's Program (1=Not at all; 5=Very Highly)		How Highly Others Outside of Division Value One's Program (1=Not at all; 5= Very Highly)		Perceived Influence Regarding Individualized Instruction (1= Little; 10= Much)		Degree to Which One Perceives Self as a Program Leader (1= Little; 10= Much)		Extent of Influence One Has on Program Decisions (1= Little; 5= Great Deal)		Extent of Influence Top Admin. Has On One's Program (1= Little; 5= Great Deal)	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Western Texas	4.43	.53	3.83	.98	3.57	.98	7.86	1.77	6.43	1.81	4.29	.95	4.33	.52
Bee County	4.70	.48	4.00	.74	4.10	.74	7.00	1.83	6.50	2.83	3.40	1.17	4.90	.32
Texarkana	4.56	.53	4.33	.71	3.67	.87	6.67	1.80	8.11	1.67	3.44	1.24	3.75	1.48
Grayson	4.20	.84	3.40	1.14	3.80	.84	6.40	1.67	7.20	1.09	3.80	1.09	4.60	.55
Laredo	4.20	.84	3.40	1.14	3.80	.84	7.33	2.00	8.10	1.97	3.60	1.71	4.40	.97
Texas Southmost	4.44	.53	4.11	.60	3.56	.88	7.33	1.58	7.11	1.76	3.33	1.00	3.78	1.39
Amarillo	4.83	.41	4.00	.63	4.17	1.17	8.50	1.52	7.33	1.86	4.17	.75	3.33	1.51
St. Philip's	4.50	.53	4.00	.67	3.50	.85	7.60	1.57	6.10	2.56	2.60	1.35	4.30	1.06
All Colleges	4.52	.533	4.08	.771	3.79	.91	7.30	1.74	7.09	2.07	3.51	1.26	4.14	1.14

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Table 7
ANSIE Scores for Group I Subjects at
Eight Community Colleges[1]

Community College	Mean	Standard Deviation
Western Texas	5.57	3.99
Bee County	6.40	3.89
Texarkana	4.44	1.94
Grayson	7.80	2.86
Laredo	6.60	2.80
Texas Southmost	7.89	4.91
Amarillo	5.83	1.17
St. Philip's	8.78	4.38
All Colleges	6.66	3.24

[1] At Amarillo, Grayson and St. Philip's equivalent data were obtained for Group II subjects as well. Results were not significantly different than for Group I subjects.

which were reflective of internally oriented individuals.

As suggested in the instrumentation section above, particular interest was paid to the Stages of Concern of the target instructors. We wondered what type of concerns relative to individualized instruction the vocational-technical instructors had. Innovation is less likely to be in evidence under circumstances where faculty members' concerns are at the lower stages of the Stages of Concern hierarchy. As can be seen from the data given in Table 8, the bulk of their concerns were at Stages 4, 5, and 6. Relatively few instructors were concerned with lower stages, though, in some schools a sizeable minority were.

Overall, the Actor Variables present a relatively positive picture of the Group I instructors on the variables presented. Their level of functioning appears high.

Characteristics of the Innovation

In examining the Characteristics of the Innovation, the Nova Project sought to assess Group I instructors' perceptions of individualized instruction. We were particularly interested to see its relative attractiveness compared to alternate instructional modes and its perceived ease of implementation. Clearly, the less its Relative Advantage and greater its complexity, the less likely individualized instruction was apt to be used and refined. As can be seen from the ratings displayed in Table 9, substantial differences were found across colleges in the relative advantage of individualized instruction as compared with alternative instructional modes. On a ten point scale where a high score indicated the respondents favored individualized instruction, mean scores ranged from 5.80 to 8.40. The only other character-

Table 8

Comparison of Ratings for Component Stages of Concern and Overall Stage of Concern Scores for Group I Subjects at Eight Community Colleges

Community College	Awareness Stage 0		Information Stage 1		Personal Stage 2		Management Stage 3		Consequences Stage 4		Collaboration Stage 5		Refocus Stage 6		Overall (Total Concern Score)	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Western Texas n= 7	10.00 (2)[1]	7.30	23.57 (12)	4.20	22.43 (12)	5.13	15.00 (15)	5.20	28.29 (58)	5.44	24.14 (41)	9.22	21.86 (30)	4.74	145.29 (86)	26.13
Bee County n= 10	10.10 (2)	4.01	23.20 (12)	5.47	22.50 (12)	6.59	15.40 (15)	8.09	24.80 (54)	6.09	17.80 (35)	7.94	12.60 (20)	6.40	126.60 (71)	22.85
Texarkana n= 7	3.71 (0-1)	3.35	13.45 (4)	9.13	14.29 (6)	11.95	5.43 (3)	4.72	27.14 (57)	5.40	19.00 (36)	7.53	15.86 (23)	11.52	98.86 (44)	32.54
Grayson n= 7	11.25 (2)	5.32	17.00 (7)	6.98	20.00 (12)	2.94	15.75 (15)	3.40	19.75 (49)	5.25	13.75 (30)	7.41	11.75 (19)	4.03	109.25 (54)	23.54
Laredo n= 10	11.80 (2)	8.01	19.60 (9)	12.02	17.30 (9)	10.96	19.60 (19)	8.68	25.70 (55)	7.28	26.40 (43)	6.36	19.30 (27)	9.65	138.80 (80)	40.29
Texas Southmost n= 7	13.86 (2)	8.55	28.43 (18)	2.50	30.00 (20)	5.29	16.00 (16)	8.04	28.57 (58)	5.35	21.71 (39)	6.87	19.86 (27)	6.34	158.43 (92)	29.09
Amarillo n= 6	5.33 (1)	4.97	13.17 (4)	9.11	11.33 (3)	10.53	8.17 (7)	9.15	27.33 (46)	4.89	22.33 (39)	6.83	14.83 (22)	6.40	104.17 (48)	39.72
St. Philip's n= 10	8.30 (1)	8.17	24.00 (12)	5.05	24.20 (15)	6.25	14.30 (15)	8.41	28.00 (58)	4.60	24.30 (41)	8.35	21.60 (29)	8.33	142.70 (83)	21.55

[1]This and other numbers in parenthesis indicates the percentile equivalent of the mean score.

Table 9

Comparison of Ratings of the Characteristics of the Innovation by Group I Subjects at Eight Community Colleges

Community College	Relative Advantage of Individualized Instruction		Compatibility of Individualized Instruction		Complexity of Individualized Instruction		Trialability Over Time of Individualized Instruction		Trialability Across Instructors of Individualized Instruction		Observability of Individualized Instruction	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Western Texas n= 7	8.00	1.63	8.00	2.38	8.57	1.27	5.71	2.87	6.14	3.39	6.86	1.22
Bee County n=10	6.11	2.09	6.22	2.95	7.22	2.68	5.22	2.91	5.56	3.25	6.55	3.05
Texarkana n=7	6.63	3.07	7.67	3.20	7.44	2.92	6.71	3.35	7.75	2.96	7.25	2.25
Grayson n= 7	7.25	1.26	6.60	1.67	6.60	1.82	5.60	1.52	4.80	1.48	4.60	1.51
Laredo n=10	8.40	2.06	8.40	1.90	8.10	2.02	5.33	2.83	5.44	3.17	7.70	2.11
Texas Southmost n=7	6.33	2.60	6.78	2.11	7.67	1.87	6.33	2.34	5.89	2.52	6.78	2.22
Amarillo n=6	5.80	2.95	7.50	3.33	7.17	2.93	6.40	2.88	6.80	2.78	6.67	3.01
St. Philip's n=10	7.60	1.90	7.50	2.07	8.60	1.51	5.80	2.74	6.80	3.16	6.90	2.73

istic which elicited substantial variation of response across schools was "Trialability Across Instructors". On this ten point scale a low score indicated that, on the average, individualized instruction might be used on a trial basis by one or two instructors in a program without requiring the participation of his/her colleagues. A high score indicated the opposite. Substantial differences of opinion exist.

Overall, individualized instruction as a case in point type of innovation seems to be generally consistent with the teaching "philosophy" and values of respondents. It is, however, viewed as a relatively complex modality.

Subjective Assessment of Collegiate Environment

As indicated earlier, the subjective environment was assessed in two ways: through the use of the Organizational Growth Stages Questionnaire (OGSQ) and through the use of an organizational climate measure, the Survey of Community College Organizational Function (SOCCOF). Each will be considered in turn.

The OGSQ was intended to provide an assessment of a particular college's organizational stage of development. Three indices of this stage were provided by responses to the instrument: 1) the type of things a college appeared to be concerned about, 2) the types of problems with which a college was being confronted, and 3) the types of behavioral indices which had been observed. The results obtained relative to this area are shown in Table 10. From an examination of this table, it can be seen there were significant differences across schools in three of the five stages of organizational concerns. The eight community colleges differed significantly among themselves with respect to extent of concern felt about Survival stage, Gaining Stability stage, and Achieving Uniqueness stage. In general, in examining those scores, it should

Table 10

Organizational Stage of Development (OSD) Attained
by Eight Community Colleges as Inferred from Ratings of Group II Subjects
on the Organizational Growth Stages Questionnaire

Community College	OSD Based on Type of Organizational Concerns[1]					OSD Based on Characteristic Problems with Which College is Confronted[2]			
	Survival Stage	Gaining Stability Stage	Gaining A Reputation Stage	Achieving Uniqueness Stage	Contributing to Society Stage	Gaining Stability Stage	Gaining A Reputation Stage	Achieving Uniqueness Stage	Contributing to Society Stage
Western Texas	8.00	7.57	8.77	8.73	8.92	.22	.17	.56	.17
Bee County	8.93	7.67	8.82	6.73	9.06	.35	.26	.51	.09
Texarkana	8.39	8.15	8.98	7.88	9.59	.25	.33	.39	.08
Grayson	6.91	8.00	7.96	6.64	9.87	.31	.31	.37	.12
Laredo	8.29	9.27	8.98	8.20	8.95	.67	.62	1.04	.11
Texas Southmost	7.91	7.75	9.60	8.27	9.36	.50	.33	.46	.10
Amarillo	7.13	6.95	8.49	8.29	9.75	.42	.29	.52	.09
St. Philip's	8.91	8.28	8.74	7.53	8.88	.64	.36	.74	.10
All Colleges	8.04	7.85	8.88	7.88	9.32	.46	.34	.59	.10
Significance of the Difference Among Means F=	3.01	3.57	1.67	2.93	.99	2.04	2.33	4.92	.21
p=	.004	.001	.11	.005	.44	.05	.03	.0000	.98

[1]Numbers in each of the columns within this category represent possible values from 0 to 12.00 where 0 = No concerns at the stage indicated; 12 = High Degree of concern at the stage indicated.

[2]Numbers in each of the columns within this category represent possible values from 0 to 2, where 0 = Absence of problems characteristic of the stage indicated; 2 = Widespread agreement as to the existence of problems characteristic of the stage indicated.

Table 10, cont.

Organizational Stage of Development (OSD) Attained
by Eight Community Colleges as Inferred from Ratings of Group II Subjects
on the Organizational Growth Stages Questionnaire

Community College	OSD Based on Behavioral Indices Selected From Among Five Prototypic College Profile Descriptions						
	College A: Survival Stage[2]	College B: Gaining Stability Stage	College C: Gaining A Reputation Stage	College D: Achieving Uniqueness Stage	College E: Contributing to Society Stage	Modal College Profile Selected as Most Descriptive[2]	Overall Composite Rating of OSD
Western Texas	2.52	2.96	2.85	3.18	3.55	3.87 (D)	C
Bee County	2.69	2.58	3.38	3.11	3.24	2.76 (C)	B
Texarkana	2.65	2.67	3.02	3.12	3.52	3.71 (D)	C
Grayson	2.79	3.00	2.69	3.56	2.96	4.07 (D)	B
Laredo	2.62	2.50	2.90	3.61	3.36	2.91 (C)	B
Texas Southmost	2.46	2.62	3.27	3.02	3.64	3.18 (C)	B
Amarillo	3.21	2.97	2.98	3.23	2.59	4.09 (D)	E
St. Philip's	2.34	2.70	2.84	3.60	3.47	3.29 (C)	A
All Colleges	2.69	2.73	3.04	3.27	3.26	3.50 (C)	C
Significance of the Difference Among Means F=	3.95	1.26	1.33	1.77	5.19	5.06	
Significance of the Difference Among Means p=	.0000	.26	.23	.09	.0000	.0000	

[1]For College A and for subsequent Colleges (B through E) numbers given in table represent a range from 0 = Not Applicable through 6 = Highly Applicable Description.
[2]Numbers in this column correspond to five OSD, where A = .5 - 1.50; B = 1.51 - 2.50; C = 2.51 - 3.50; D = 3.51 - 4.50; E = 4.51 - 5.00.

be noted that the lower the score, the less the preoccupation with concerns typical of that stage. The eight schools seem generally most concerned with matters related to top levels or stages. Following a parallel logic, respondents indicated that their institutions were investing their greatest energies in dealing with problems characteristic of the Achieving Uniqueness stage. When behavioral indices were examined, both Achieving Uniqueness and Contributing to Society emerged as the most applicable categories. Substantial discrepancies were found, however, when the self ratings of respondents were compared with the rating of a Nova project rater; the raters' subjective assessment of the eight participating colleges was much less homogeneous. The project rater evaluated the schools as ranging in their organizational development across the entire spectrum of stages. Because of wide variation in the number of respondents who completed the OGS instrument, the stability of these results must be interpreted cautiously. Furthermore, the instrument itself lacks adequate evidence of its validity. Nevertheless, those colleges rated as being at lower levels of development might well seek further data on their own to confirm the validity of these findings.

The investigators were particularly interested in determining whether or not the level of organizational development paralleled that of faculty, administrators, and staff with respect to their own personal levels of development. The Nova project staff wondered whether the organizations that appeared to be the best established were the same colleges whose personnel appeared to be functioning at the highest levels as individuals. To answer that question correlations were computed to ascertain the associative relationship between the two sets of stages. As can be seen from an examination of the results

given in Table 11, little relationship was found between lower level stages for individuals and lower level stages for colleges. In fact the correlations between the two sets of data at the higher stage levels were negative. An exception to these overall results may be the relationship between the fifth individual stage of development, Collaboration, and the Achieving Uniqueness organizational stage. In this instance moderate level correlations were found. Overall, these findings failed to provide convincing evidence of a clear relationship between these two sets of data.

We now turn to the SOCCOF results. As indicated earlier, the SOCCOF is an instrument adapted by the Nova Project to yield indices of organizational climate for community colleges. The results obtained are shown on the four sub-scales of the SOCCOF as given in Table 12. The results shown represent factor scores derived from standardizing the raw scores such that their mean is zero and their standard deviation is 1.0. This transformation was accomplished in order to assure comparability of results across the four sub-scales.

In interpreting the scores, for example, Factor I, Satisfaction with College and Job, reveals that respondents at Grayson were the most positively disposed of any of the colleges. Their score of .40 indicates that their level of satisfaction with their college, on the average, was almost half a standard deviation above the mean. Correspondingly, respondents from St. Phillip's were about one fourth of a standard deviation below the mean (-.26) with respect to their satisfaction. On the Satisfaction sub-scale, it may also be noted that the standard score differences across the eight community colleges were highly significant, suggesting substantial differences exist

Table 11

Intercorrelations Among Individual and Organizational Stages of Development Variables (Stages of Concern and Organizational Growth Stages)

Stages of Concern for the Individual	Organizational Stages of Development Measures									
	Survival Stage	Stability Stage	Gaining Reputation Stage	Achieving Uniqueness Stage	Make a Contribution Stage	Characteristic Problem at Survival Stage	Characteristic Problem at Stability Stage	Characteristic Problem at Gaining Reputation Stage	Characteristic Problem at Achieving Uniqueness Stage	Characteristic Problem at Making a Contribution Stage
Awareness Concerns (CQ0)	-.15	.08	.05	-.07	-.02	-[1]	.10	.08	.06	.10
Informational Concerns (CQ1)	.20	-.04	.33	.03	-.31	-	.16	-.09	.06	.05
Personal Concerns (CQ2)	.22	-.08	.37	.03	-.27	-	.13	-.13	-.02	.01
Management Concerns (CQ3)	.07	.25	.14	-.01	-.29	-	.27	.22	.31	.10
Consequences Concerns (CQ4)	.16	-.04	.28	.30	-.19	-	.08	-.04	.06	.01
Collaboration Concerns (CQ5)	.16	.19	.27	.39	-.33	-	.31	.23	.39	.05
Refocusing Concerns (CQ6)	.02	.13	.13	.26	-.20	-	.18	.08	.18	.18

[1]Data not gathered, as all schools were clearly above this stage.

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Table 12

Means and Analysis of Variance Comparisons of Factor Scores[1] on the Survey of Community College Organizational Functioning (SOCCOF) by Group II Subjects at Eight Community Colleges

Community College	SOCCOF Factor I: Satisfaction with College and Job (n=360)		SOCCOF Factor II: Supervision Leadership (n=360)		SOCCOF Factor III: Team Collaboration (n=360)		SOCCOF Factor IV: Org. Constraints on Efficient Functioning (n=360)	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Western Texas (n=21)	-.11	1.06	-.08	1.00	.23	1.02	.15	.88
Bee County (n=43)	-.12	.94	.04	.86	.32	.83	-.41	.79
Texarkana (n=34)	.01	.93	.55	.74	-.12	.87	.15	.93
Grayson (n=24)	.40	1.05	.23	.74	.21	.70	.20	.70
Laredo (n=26)	-.41	1.03	.05	1.06	-.02	1.08	-.21	.76
Texas Southmost (n=75)	.003	.89	-.14	1.04	-.08	1.03	-.09	1.05
Amarillo (n=82)	.34	.86	-.10	1.01	.01	1.0	-.06	.89
St. Philip's (n=55)	-.26	.98	-.08	1.00	-.10	.97	.36	.87
All Colleges (n=360)	.01	.97	.01	.93	.02	.94	-.004	.86
Significance of Diff. Among Means F= p=	3.58 .001		2.24 .03		1.22 .29		3.23 .002	

[1] Factor scores are based on a mean of 0 and a standard deviation of 1. Thus a negative mean score reflects a below average mean value.

with respect to this climate variable ($p < .001$).

From an examination of the other three sub-scales, it can be seen that two scales also yielded statistically significant differences across institutions. The eight community colleges differed significantly in their perceptions of Supervisory Leadership. They varied from a high of .55 at Texarkana (relatively pleased with the quality of supervisory leadership) to a slightly below average perception of -.14 (slightly displeased) at Texas Southmost. The differences across schools on this scale were significant at the .03 level. The fourth sub-scale, Organizational Constraints on Effective Functioning also reveals highly significant differences. The colleges ranged from a high of .36 for St. Philip's to a low of -.41 for Bee County. This outcome is not surprising given the relative sizes of the two community colleges. A large school is likely to have a greater amount of red tape than is a small one. Differences across all eight institutions were significant at the .002 level. The only scale on which significant differences were not found was the third sub-scale, Team Collaboration ($p > .05$). Bee County registered the highest level of Team Collaboration, .32, and Texarkana registered a slightly below average score of -.12. It is noteworthy that the results are, on balance, mildly positive, with only a few instances of below average (negative) satisfaction with college indicated. At the same time, it is equally of interest that the results were not strongly positive either. In no case was there a mean above .55 on any of the four factors for any of the eight community colleges.

The last source of institutional data emerged from the Objective Institutional Characteristics Questionnaire (OIC). Regretably, not all insti-

tutions provided the data requested. Appreciable missing data exist. As a result of the missing data, the OIC results are presented only for descriptive purposes and were not included, as originally intended, in the regression analysis. They often reveal wide differences. In some instances these differences are maintained even when corrected for size of the colleges. Note the wide range of differences reported with respect to faculty-student ratio. As can be seen in Table 13, the faculty-student ratio ranges from a low of 1 to 16 at Western Texas to 1 to 36 at Texas Southmost. Even the partial data available reveal wide variation in Homogeneity in the environment, an index of the dispersion of students across various types of curricular programs. Bee County with a Homogeneity index of 17% reflects the greatest diversity of students across programs of study. Texas Southmost reflects the highest concentration of students in several dominant curricular areas, (54%). It is also of interest to note the relative proportion of vocational-technical students to those in academic curricula. There is a 1.79 to 1 dominance of vocational-technical students over academic students at St. Philip's (4,538/2,536), as opposed to a 4.2 to 1 dominance of academic students at Texas Southmost (3,629/851). Community colleges could well maintain data of these types on their own as indices of institutional functioning.

Results for the Two Dependent Variables: LoU and PSII Scores

The two dependent variables of the study, LoU and PSII scores, were not only critical for the regression analysis, but have utility in their own right as descriptors of the extent of usage of individualized instruction within the eight colleges. It will be recalled that the Level of Use (LoU) system was derived from the CBAM model (Loucks, Newlove, and Hall, 1976).

Table 13

Objective Institutional Characteristics of Eight Community Colleges

Community College	Factor I: Affluence							
	Size of Operating Budget	Faculty/ Student Ratio	Mean ACT Aptitude Level of Entering Students (Composite Score)	Tuition and Required Fees	Faculty Level of Education (%)			
					Doc-torate	Masters	Bacca-laureate	Less Than Bac.
Western Texas		1 to 16	15.5	$250.00	13	63	9	15
Bee County	3,255,403	1 to 20	14.1	$210.00	10	53	18	19
Texarkana		1 to 28						
Grayson		1 to 33						
Laredo		1 to 23						
Texas Southmost	6,558,340	1 to 36	13.3	$154.00	6	55	29	10
Amarillo		1 to 25						
St. Philip's	7,444,008	1 to 25	10.6	$219.00	3.4	47.9	18.2	30.6

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Table 13, cont.

Objective Institutional Characteristics of Eight Community Colleges

Community College	Factor II: Size					
	Relative Library Size (No. of Vol. per Student Enrollment)	Relative LRC Size (No. of Tapes, Films per Student Enrollment)	Total Student Enrollment	No. Enrolled in Academic Curricula	No. Enrolled in Voc./Tech. Curricula	No. of Curricula Offered
Western Texas			1,190	765	425	
Bee County	14.18	.51	2,220	1,100	1,120	42
Texarkana			3,276			
Grayson			3,772	1,924	1,848	
Laredo			3,206	2,212	994	
Texas Southmost	20.09	1.66	4,480	3,629	851	39
Amarillo			4,730	2,537	2,193	
St. Philip's	5.94	1.01	7,074	2,536	4,538	63

Table 13, cont.

Objective Institutional Characteristics of Eight Community Colleges

Community College	Factor III: Growth			Factor IV: Masculinity		
	Growth Rate 9/71-9/76 (% Increase)	No. of A.A. Degrees Granted in 1976	No. of Students Completing Other Programs in 1976	% of Males in Student Body	% of Out-of-State Students	No. of Voc/Tech Programs Offered Relative to Total No. of Programs (%)
Western Texas	83	115	20	51	1	15
Bee County	99	249	172	58	1	50
Texarkana						
Grayson		114	244			
Laredo						
Texas Southmost						
Amarillo		109	399			
St. Philip's	173.5	163	253	70.3	1	32

Table 13, cont.

Objective Institutional Characteristics of Eight Community Colleges

Community College	Factor V: Homogeneity					
	% of Students in Realistic Orientation Fields	% of Students in Intellectual Orientation Fields	% of Students in Social Orientation Fields	% of Students in Conventional Orientation Fields	% of Students in Enterprising Orientation Fields	% of Students in Artistic Orientation Fields
Western Texas	50	4	20	14	8	4
Bee County	24	12	17	21	7	19
Texarkana						
Grayson						
Laredo						
Texas Southmost		10			1	4
Amarillo						
St. Philip's	39.9	3.1	22.2	10.7	5.3	14.5

Table 13, cont.

Objective Institutional Characteristics of Eight Community Colleges

Community College	Factor V: Homogeneity, cont.					
	Homogeneity of the Environment (%)	% of Black Students	% of Mexican-American Students	% of Anglo Students	% of Other Students	% of Students Over 22 yrs.
Western Texas	46	4	7	88		51
Bee County	17	5	45	50		65
Texarkana						
Grayson						
Laredo						
Texas Southmost	54	.25	67.65	22.21	.75	55
Amarillo						
St. Philip's	34.6	24.3	45.5	28.4	1.6	76.9

Table 13, cont.

Objective Institutional Characteristics of Eight Community Colleges

Community College	Miscellaneous Additional Data			
	Estimated % of Students in 1976 Transferring to Sr. Colleges	Estimated % of Students in 1976 Having Residence Outside of College's Designated Service Area	Withdrawal Rate (%)	
			Academic Programs	Voc/Tech Programs
Western Texas	50	5	5	17
Bee County	50	60	50	25
Texarkana				
Grayson				
Laredo				
Texas Southmost	65	25	14	14
Amarillo				
St. Philip's	36	2.5	Not Known	Not Known

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The eight stages of the LoU, as fully described in Appendix A, indicate qualitative differences in the degree of involvement with an innovation. So that institutional scores on this important variable will be meaningful, descriptions are presented of critical behaviors associated with each of the eight levels.

Level of Use	Criterion Behavior Displayed	Range of Scores Within Each Level
Level 0: Non-Use	Examines the potential or actual use of innovation or some aspect of it	0.00-0.99
Level I: Orientation	Takes action to learn more detailed information about the innovation	1.00-1.99
Level II: Preparation	Makes a decision to use the innovation by establishing a time to begin	2.00-2.99
Level III: Mechanical Use	Changes, if any, and use are dominated by user need (concern with mastering the tasks required to use the innovation)	3.00-3.99
Level IVA: Routine	A routine pattern of use is established	4.00-4.99
Level IVB: Refinement	Changes in use of the innovation occur based on formal or informal evaluation intended to improve student learning outcome	5.00-5.99
Level V: Integration	Initiates changes in use of innovation based on input of and in coordination with colleagues and their instructional efforts	6.00-6.99
Level VI: Renewal	Begins exploring alternatives to or major modification of the innovation presently in use	7.00-7.99

With this perspective the LoU results may now be examined.

It is apparent from the data given in Table 14 that the schools ranged on the average from those institutions which were utilizing individualized in-

Table 14

Comparison of Ratings for Component LoU and Overall LoU Scores for Group I Subjects at Eight Community Colleges

Community College	Knowledge		Acquiring Information		Sharing		Assessing		Planning		Status Reporting		Performing		Overall LoU	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Western Texas n= 7	4.29	2.22	4.71	2.29	4.71	2.21	4.29	2.06	4.57	2.23	4.57	2.23	4.43	2.07	4.57	2.23
Bee County n= 10	3.60	2.17	3.50	2.37	3.30	2.26	3.30	2.00	3.20	2.10	3.40	2.17	3.40	2.17	3.40	2.17
Texarkana n= 9	4.44	1.94	4.56	1.88	4.56	2.13	4.44	1.67	4.78	1.79	4.89	1.83	4.78	1.79	4.78	1.79
Grayson n= 5	3.20	1.64	3.60	1.95	3.40	2.19	3.80	2.17	3.60	1.95	3.40	2.19	3.40	2.19	3.40	2.19
Laredo n= 10	4.00	1.83	4.10	1.66	3.70	1.89	3.90	1.85	3.60	2.01	3.50	2.12	3.60	2.01	3.60	2.01
Texas Southmost n= 9	3.00	1.80	3.22	2.05	2.89	1.90	3.33	1.94	2.44	1.94	3.22	2.05	3.11	2.15	3.22	2.05
Amarillo n= 6	4.33	2.06	4.33	2.07	3.33	2.50	4.00	2.10	4.00	2.10	4.17	2.31	4.17	2.32	4.17	2.32
St. Philip's n= 10	4.40	1.43	4.40	1.71	4.40	1.58	4.40	1.51	4.40	1.51	4.50	1.58	4.50	1.58	4.50	1.58

struction on a primarily mechanical (3.00-3.99) basis to those institutions that were utilizing individualized instruction routinely (4.00-4.99). As suggested by the standard deviations there were a few individuals functioning at up to two levels higher and lower than that, but the most typical instructor performance utilized individualized instruction routinely or mechanically without modification. The schools ranged, on the average, from a high of 4.78 at Texarkana, where there tended to be routine level of use of individualized instruction to 3.22 for Texas Southmost, where there tended to be instructors who were not yet comfortable or proficient with the use of individualized instruction. In addition to the overall total scores, it is noteworthy that there was relative comparability of performance across sub-scales of the measure. For example, persons who tended to have mean overall LoU scores in the 4-range tended to have the same level of use with respect to the component areas. In summary, it can be said that there is evidence of wide scale usage of individualized instruction at all of the participating schools. However, qualitatively speaking, there is little indication of higher levels of use, that is, those levels at which instructors adapt individualized instruction procedures or materials to tailor them to the needs of their students.

The second dependent variable, PSII total score, provided some indication of the extent to which specific components of individualized instruction were being practiced at the participating community colleges. In interpreting the results of PSII, the total score provides the most meaningful data for our purposes. As can be seen from the data given in Table 15, scores ranged from a low of 198.20 (45%ile) at Grayson, to a high of 316.00 (71%ile) at Laredo. These overall results indicate a moderate degree of usage of individualized

Table 15

Comparison of Personalized Systematic Individualized Instruction (PSII) Mean Factor and Mean Total Scores By Group I Subjects Across Eight Community Colleges

Community College	Personalized Systematic Individualized Instruction Factors										
	Factor I Self-pacing	Factor II Relevance	Factor III Learning Climate	Factor IV Supportive	Factor V Personhood Development	Factor VI Course Design & Revision	Factor VII Flexible Progress	Factor VIII Student Contracts	Factor IX Student Learning Styles	Factor X Faculty Self-Image	Factor XI Total Score
	Mean and Std. D.	Mean and Std. D.	Mean and Std. D.	Mean and Std. D.	Mean and Std. D.	Mean and Std. D.	Mean and Std. D.	Mean and Std. D.	Mean and Std. D.	Mean and Std. D.	Mean and Std. D.
Western Texas n= 7	42.57[1]	20.43	27.43	18.57	43.29	23.86	17.29	11.00	21.86	31.57	262.57
	26.66	8.60	6.60	3.55	5.41	6.01	5.16	7.07	6.36	6.16	52.65
	(43)	(58)	(78)	(53)	(67)	(60)	(69)	(31)	(62)	(63)	(59)
Bee County n= 10	41.50	20.80	27.20	18.10	47.00	25.20	18.20	8.90	16.40	28.90	252.20
	23.56	6.03	3.88	3.11	6.60	7.01	3.01	5.48	5.66	8.13	56.10
	(42)	(59)	(78)	(52)	(72)	(63)	(73)	(25)	(47)	(58)	(57)
Texarkana n= 9	50.78	23.89	30.67	20.89	47.00	28.89	18.78	18.44	19.00	28.00	286.22
	21.56	5.47	2.55	3.22	8.00	6.66	6.12	8.41	6.70	7.45	47.19
	(51)	(68)	(88)	(60)	(72)	(72)	(75)	(53)	(54)	(56)	(64)
Grayson n= 5	26.80	16.80	26.00	15.40	36.40	19.60	13.00	5.80	14.80	22.80	198.20
	28.42	4.09	4.42	3.78	6.10	5.73	4.74	5.26	5.81	3.90	55.72
	(27)	(48)	(74)	(44)	(55)	(49)	(52)	(17)	(42)	(46)	(45)
Laredo n= 10	58.33	25.78	29.67	22.11	53.33	29.11	20.78	15.89	25.67	35.33	316.00
	17.46	8.57	5.48	2.62	9.00	8.88	2.44	6.88	6.75	9.67	63.93
	(58)	(74)	(85)	(63)	(82)	(73)	(83)	(45)	(73)	(71)	(71)
Texas Southmost n= 9	39.00	19.67	27.11	16.78	44.22	18.78	10.75	15.63	17.88	27.38	233.00
	16.56	6.69	6.95	4.52	7.69	6.85	7.57	6.16	5.05	7.54	54.48
	(39)	(56)	(77)	(48)	(68)	(47)	(43)	(45)	(35)	(55)	(52)
Amarillo n= 6	54.00	19.33	29.67	18.67	51.00	22.33	18.67	13.00	17.50	34.33	278.50
	30.55	7.29	3.67	4.97	5.87	10.69	6.21	10.49	9.14	7.23	77.90
	(54)	(55)	(85)	(53)	(78)	(56)	(75)	(37)	(50)	(69)	(63)
St. Philip's n= 9	44.30	22.90	27.00	18.30	53.30	25.70	17.70	12.80	19.30	31.40	270.70
	13.45	10.35	5.10	3.30	6.24	11.05	3.62	6.76	5.20	7.93	57.48
	(44)	(65)	(77)	(52)	(82)	(64)	(71)	(37)	(55)	(63)	(61)

[1]This entry and the one immediately below represent the mean and standard deviation respectively. The same pattern is used throughout. The number in parenthesis represents the percentile equivalent for the mean.

instruction within these colleges. Similarly, the ten sub-scales of the PSII indicate moderate use of the individualized instruction components. Further, those institutions which were the highest and lowest on the total score tended to be those which were also highest and lowest on the individual sub-scales. Greatest variation occurred with the institutions having itermediate level total scores. Nevertheless, certain of the sub-scale scores appear to be more elevated than others, indicating they are more widely used. For example, Personhood Development, Factor V, was a sub-scale on which virtually all of the participating schools attained at least a moderately high score. Clearly, there is a high degree of acceptance of Personhood Development.

Comparison of School Differences on LoU and PSII Scores

It should already be apparent to the careful reader that those schools having the highest ratings on one of the criterion measures did not necessarily have the highest ratings on the other. The relationship between instructor scores and ratings on the two measures is made explicitly clear by the rank ordered data presented in Table 16. From an inspection of these data, it can be seen that some correlation exists between the two sets of scores, but that there is some significant variability. Laredo was ranked highest on the PSII scores, but was fifth ranked among the LoU ratings. Western Texas was second highest among the LoU ratings, but sank to fifth in the PSII scores. Other schools, however, tended to maintain their general position at the upper or lower end of the rankings for both sets of data. These results serve to highlight the distinction between the two criterion measures. Whereas LoU ratings tap the propensity of instructors to continually revise and adapt individualized instruction methodologies employed, PSII taps how comprehensively

Table 16

Comparison of Rank Ordering of Level of Use (LoU) and Personalized Systematic Individualized Instruction (PSII) Scores for Group I Subjects Across Eight Community Colleges

Rank Order	LoU Score	PSII Score
First	Texarkana 4.78	Laredo 316.00
Second	Western Texas 4.57	Texarkana 286.22
Third	St. Philip's 4.50	Amarillo 278.50
Fourth	Amarillo 4.17	St. Philip's 270.70
Fifth	Laredo 3.60	Western Texas 262.57
Sixth	Grayson 3.40	Bee County 252.20
Seventh	Bee County 3.40	Texas Southmost 233.00
Eight	Texas Southmost 3.22	Grayson 198.20

the various facets of individualized instruction were incorporated into the instructional procedures used.

Differences in LoU and PSII Results Across the Five Categories of Curricula

The primary concern of the investigators was to determine if significant differences existed across the eight participating community colleges. It was also of interest whether or not there were significant differences across curricular areas. Perhaps certain vocational-technical program areas lent themselves more readily than others to instructional innovation. The results of the study tend to support this proposition for both LoU and PSII scores. When the results obtained from instructors from each of the five types of programs were collapsed across schools and then compared, it was found that there were significant programmatic differences in propensity to be involved with instructional innovation. These differences are summarized in Table 17. As indicated in Table 17, instructors in secretarial practice and vocational nursing tended to achieve higher LoU ratings than did their counterparts in the other three programs of study. Significant differences were found not only for LoU total scores, but for six of the seven component LoU sub-scales.

Similarly, the results shown in Table 18 are suggestive of significant differences across programmatic areas with respect to PSII scores as well. Instructors in the secretarial practice curriculum maintained relatively high PSII scores on the component sub-scales and on the total score. However, instructors in electronics, and sometimes automotive mechanics, eclipsed the secretarial practice instructors by achieving even higher scores. Interestingly enough, the latter two areas were relatively low on the LoU ratings. Vocational nursing scores dipped to fourth on the PSII scores, whereas instructor scores

Table 17

Mean and Analysis of Variance Comparisons of LoU Component and Total Scores Across Five Vocational-Technical Program Areas.[1]

Voc-Tech Program	LoU Factor I: Knowledge	LoU Factor II: Acquiring Information	LoU Factor III: Sharing	LoU Factor IV: Assessment	LoU Factor V: Planning	LoU Factor VI: Status Reporting	LoU Factor VII: Performing	LoU Total Scores
Secretarial Practice n= 14	4.71[2] 1.68	4.50 1.74	4.57 1.79	4.43 1.65	4.43 1.65	4.57 1.79	4.57 1.79	4.57 1.79
Mid-Management n= 14	2.57 2.10	2.57 2.24	2.36 2.34	2.57 2.03	2.71 2.16	2.64 2.21	2.64 2.21	2.71 2.16
Vocational Nursing n= 13	4.62 1.33	5.08 1.32	4.54 1.27	4.65 1.44	4.38 1.94	4.85 1.46	4.77 1.42	4.77 1.42
Automotive Mechanics or Welding n= 17	3.82 1.74	4.12 1.83	3.71 1.99	3.88 1.83	3.65 2.06	3.71 2.11	3.77 2.14	3.71 2.11
Electronics n= 9	3.78 1.79	3.67 1.94	3.56 2.19	3.89 1.69	3.77 1.92	3.89 2.03	3.78 1.86	3.89 2.03
Significance of the Difference Among Means F =	3.35	3.58	2.99	3.0	1.74	2.69	2.61	2.45
p =	.02	.01	.03	.03	.15	.04	.04	.05

[1]Data reported are scores for instructors within each of the five program areas averaged across the participants from the eight participating community colleges.

[2]The figures given in each cell are the means and standard deviation respectively.

Table 18

Mean and Analysis of Variance Comparisons of PSII Component Factor and Total Scores Across Five Vocational-Technical Program Areas[1]

Voc-Tech Program	PSII Factor I: Self Pacing	PSII Factor II: Relevance	PSII Factor III: Learning Climate	PSII Factor IV: Supportive Climate	PSII Factor V: Student Personhood Development	PSII Factor VI: Course Design and Revision	PSII Factor VII: Flexible Progress	PSII Factor VIII: Student Contracts	PSII Factor IX: Student Learning Styles	PSII Factor X: Faculty Self-Image	PSII Total Score
Secretarial Practice n= 14	53.86 (16.09)[2]	20.14 (6.65)	27.57 (5.00)	17.64 (4.60)	49.97 (8.36)	24.43 (8.33)	18.29 (3.22)	14.71 (6.79)	19.93 (3.87)	30.29 (6.65)	276.64 (39.28)
Mid-Management n= 14	35.86 (23.33)	17.79 (6.99)	25.14 (5.49)	17.93 (4.03)	43.93 (7.93)	22.71 (6.23)	13.43 (5.29)	12.71 (8.99)	14.79 (6.78)	26.57 (4.11)	231.36 (55.50)
Vocational Nursing n= 13	27.85 (17.63)	24.23 (7.24)	29.70 (4.94)	18.92 (3.62)	47.92 (8.04)	23.15 (8.70)	18.69 (3.69)	7.69 (5.13)	21.62 (6.86)	28.85 (9.29)	250.31 (63.33)
Auto Mechanics or Welding n= 16	50.06 (14.63)	22.88 (7.03)	28.81 (4.12)	19.25 (3.24)	45.94 (6.66)	26.00 (8.63)	19.00 (4.98)	11.50 (7.70)	18.44 (5.91)	31.44 (7.64)	273.31 (54.76)
Electronics n= 9	56.67 (27.93)	22.44 (11.61)	31.11 (3.79)	20.22 (4.55)	54.11 (8.96)	26.78 (11.21)	21.13 (4.09)	14.88 (10.30)	23.50 (8.32)	38.25 (10.22)	309.13 (93.08)
Significance of the Difference Among Means F=	4.97	1.50	2.53	.80	2.72	.69	5.12	1.75	3.25	3.26	2.61
Significance of the Difference Among Means p=	.002	.21	.05	.53	.04	.61	.001	.15	.02	.02	.04

[1]Data reported are scores for instructors within each of the five program areas averaged across the participants from the eight participating community colleges.

[2]Figures in parenthesis represent the standard deviation from the mean.

had been second in LoU ratings. Only mid-management maintained its relatively lower scores on both LoU and PSII measures.

It would appear as if there are significant differences across programs in their propensity to become involved with instructional innovation, and that these may interact with institutional or instructor characteristics to account for the school differences obtained.

Regression Analysis Results Predicting LoU and PSII Scores

Having examined the major variables of interest descriptively, it is appropriate to turn now to examining their efficacy as predictor variables in a regression analysis. It will be recalled that the regression analysis was the primary basis from which the Nova project sought to answer the question, "What types of variables are predictive of high and low level usage of individualized instruction?" Two regression analyses were performed, one in an effort to predict LoU total score, and the second to predict PSII total score. Both will be examined.

LoU Results: When person and environment variables were combined into a single regression equation to predict LoU, seven variables emerged. These variables are shown in Table 19. As can be noted, five of the seven variables were actor variables, and two were variables dealing with characteristics of the innovation itself. No environment variables emerged as significantly associated with the criterion, and none emerged among the statistically significant predictors, though several did contribute to increasing the total variance accounted for. As can be noted from an examination of Table 19, the first emerging variable, Concern About Collaboration with Colleagues, was a highly potent predictor of LoU. It correlated .46 with the criterion, and by itself

Table 19

Predictor Variables Most Highly Predictive of the
Criterion of LoU Total Score
Across Eight Community Colleges

Predictor Variables	F to Enter	Significance Level	Multiple R	R Square	R Square Change	Simple r	Overall F
1. Degree of Concern About Collaboration and Co-operation with Colleagues	14.13	.00	.46	.21	.21	.46	14.13****
2. Sex	6.09	.02	.54	.29	.08	.29	10.79****
3. Participation in Workshops, Conferences, etc., on Individualized Instruction	3.83	.06	.59	.34	.05	.28	8.86****
4. Extent to Which Individualized Instruction Lends Itself to Limited-Extended Trial Use	5.07	.03	.63	.40	.06	.26	8.44****
5. Cosmopoliteness: Number of Publications	2.88	.10	.66	.44	.03	.32	7.58****
6. Cosmopoliteness: Number of Professional Contacts	2.60	.11	.68	.47	.03	.14	6.98****
7. Extent to Which Individualized Instruction Is Seen as Being Difficult-Easy to Understand and Use.	2.84	.10	.70	.50	.03	.23	6.60****

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accounted for 21% of the variance. It should be pointed out that, of the remaining six significant predictors, four were person variables. They tended to be variables associated with cosmopoliteness. In this regard, therefore, the Nova study provides further evidence in support of this important actor variable.

The second emerging significant predictor, sex, is of special interest. It is not known whether gender per se accounts for the results obtained. Given the fact that the five target program areas within voc-tech tend to be strongly male or female dominated, it is possible that the results are simply pointing to an increased probability that instructors teaching secretarial practice and vocational nursing are much more likely to innovate with respect to individualized instruction than are instructors teaching welding, auto mechanics, or electronics. Nevertheless, women were much more likely than men to be higher level users of individualized instruction.

It is also worthy of mention that it tended to be important how the innovation itself was perceived. It would appear as though those who viewed individualized instruction as lending itself to more extended as opposed to limited trial use tended to be those most likely to function at a high level. This result may run contrary to common sensical expectations which might lead one to suspect that those who saw individualized instruction as relatively easy to use might be those most likely to use it. It would appear that what is more likely to have happened is that those who are most deeply involved with individualized instruction recognize that it is a time consuming and long term enterprise, and hence are willing to provide the time and effort required to prepare their classes for individualized instruction. At the same time, despite

the realistic assessment of the extended commitment required, it is significant that the second innovation variable, Extent to Which Individualized Instruction is Seen as Being Easy/Difficult to Use, those who viewed individualized instruction as being easier (i.e. do-able) were more likely to be those who were involved most deeply in its use. In summary, we have seven variables accounting for a multiple R of .70, or 50% of the variance in LoU scores, with these variables being primarily actor variables and secondarily Characteristics of the Innovation. To facilitate comparison of school differences, comparative means and standard deviations for these seven predictor variables are summarized in Table 20.

PSII Results: Seven variables emerged from the step-wise regression as predictors of PSII scores. The seven variables yielded an impressively high multiple correlation coefficient (R) of .84, and accounted for 70% of the variance in the PSII criterion measure. These significant predictors and their contributions are shown in Table 21.

Given the fact that the two criteria, LoU and PSII, correlate .46 with one another, it is not surprising that some of the same variables which were robust predictors of LoU would also emerge as significant predictors of PSII total score. It is noteworthy that Concern About Collaboration, a Stage of Concern variable which was the most potent predictor of LoU, was also the first extracted predictor variable in the step-wise regression of PSII as well. This variable, by itself, accounted for 25% of the variance in the PSII criterion. A second Stage of Concern variable, Degree of Concern with Learning More About Individualized Instruction, was the fourth extracted predictor. Its negative weighting (-.20) simply indicates that the less concerned one is with acquiring

Table 20

Mean and Analysis of Variance Comparisons
of Seven Predictor Variables of LoU Total Score
Across Eight Community Colleges

Community College	Degree of Concern About Collaboration With Colleagues (Stage 5)		Sex (Male = 1, Female = 2 Equal No. of Both = 1.50)		Number of Workshops, Conferences Attended on Indiv. Instr.		Extent to Which Indiv. Instr. Lends Itself to Limited/ Extended Trial Use		Number of Publications: an Index of Cosmopoliteness		Number of Professional Contacts: an Index of Cosmopoliteness		Extent to Which Indiv. Instr. Seen as Complex (1= Very Complex 10= Not Complex)	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Western Texas	24.14	9.22	1.43	.54	4.33	2.50	5.71	2.87	2.29	1.50	2.86	1.86	8.57	1.27
Bee County	17.80	7.94	1.30	48	6.00	2.94	5.22	2.91	2.50	1.85	3.80	1.99	7.22	2.68
Texarkana	19.00	7.53	1.67	.50	5.33	3.24	6.71	3.35	2.38	.92	3.56	2.35	7.44	2.92
Grayson	13.75	7.41	1.20	.45	6.20	3.03	5.60	1.52	3.00	1.00	2.00	1.41	6.60	1.82
Laredo	26.40	6.36	1.40	.52	6.40	1.65	5.33	2.83	3.10	1.79	3.80	1.62	8.10	2.02
Texas Southmost	21.71	6.87	1.44	.53	5.22	2.95	6.33	2.34	2.56	1.94	3.22	1.56	7.67	1.87
Amarillo	22.33	6.83	1.33	.52	6.67	1.75	6.40	2.88	4.33	1.75	4.67	1.37	7.17	2.93
St. Philip's	24.30	8.35	1.40	.52	6.10	2.02	5.80	2.74	1.90	1.29	3.60	1.51	8.60	1.51
All Colleges	21.18	7.56	1.39	.49	5.73	2.49	5.77	2.59	2.63	1.62	3.43	1.79	7.67	2.17

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Table 21

Predictor Variables Most Highly Predictive of the Criterion of PSII Total Scores Across Eight Community Colleges

Predictor Variables	F to Enter	Significance Level	Multiple R	R Square	R Square Change	Simple r	Overall F
1. Degree of Concern About Co-ordination and Co-operation With Colleagues	17.58	.00	.50	.25	.25	.50	17.58****
2. Perceived Value of One's Program by Others in One's Division	17.95	.00	.66	.44	.19	.47	20.57****
3. Level of Education Attained	5.52	.02	.70	.50	.06	-.20[1]	16.75****
4. Degree of Concern With Learning More About Individualized Instruction	7.72	.008	.75	.56	.06	-.20	16.15****
5. Extent of Student Influence on One's Program of Study	9.23	.004	.80	.63	.07	.42	16.89****
6. Number of Years of On-the-Job Experience	7.10	.01	.84	.68	.05	-.21	17.01****
7. Perceived Value of One's Program by Self	2.85	.09	.84	.70	.02	.31	15.55****

[1]Is negatively correlated with PSII total score.

more information about individualized instruction, the greater probability of more inclusive usage. Those who are no longer in the learning phase are more competent and hence tend to use individualized instruction more comprehensively.

Two additional predictors, Perceived Value of One's Own Program by Others in One's Division, and Perceived Value of One's Program by Self, (the second and seventh extracted predictors respectively) seemed to have a common underlying rationale. It would appear that when an instructor is confident of the esteem in which his program is held by his co-workers, and when that instructor's personal evaluation of that program is also positive, the instructor experiances sufficient support to engage in an instructional innovation. It is as if the high esteem of the program gives the instructor the license to try, and to risk the possibility that the innovation may fail,

An additional predictor, Extent of Student Influence on One's Program of Study, seemed consistent with the other predictors. It may be reasoned that the more one perceived students as having an influence in shaping one's program of study, the more one would be predisposed to experiment with an instructional methodology intended to be maximally responsive to individual differences in students. Such an interpretation would seem to be tenable in accounting for this outcome.

The last two significant predictor variables, Level of Education Attained and Number of Years of On-the-Job Experience, do not lend themselves so easily to interpretation. At face value, the two predictors, which were negatively correlated with the criterion, indicate that the higher one's level of education and the greater one's on-the-job experience, the less is the likelihood

that one will engage in instructional innovation of the type considered here. Should this result be considered as a "burn-out" factor? Is it possible that after a number of years of experience and training one tires of trying out new instructional methodologies? Could it be that innovation is primarily attempted by younger, less well educated and idealistic faculty? Alternatively, these results may simply indicate that those with greater experience and training have already found an instructional modality that works for them, and they see no need to alter these successful strategies. It is difficult to say which of these possibilities, or perhaps others are true. It would be well for the colleges involved to inquire into these possibilities. In doing so, it may be helpful to examine Table 22 which summarizes comparative means and standard deviations on the seven predictors. Also, it may be particularly useful for each institution to examine the extent to which engaging in instructional innovation is rewarded or encouraged within its setting.

In summary, the variables emerging as predictors of the PSII were actor variables, rather than institutional variables. It might, however, be said that instructor views about his program and student say in that program might be tapping setting attributes, albeit from the perspective of the respondent.

Table 22

Mean and Analysis of Variance Comparisons
of Seven Predictor Variables of PSII Total Score
Across Eight Community Colleges

Community College	Degree of Concern About Collaboration With Colleagues (Stage 5)		Perceived Value of One's Program by Others in One's Division (1=Not at all 5=Very Highly)		Level of Education Attained	Degree of Concern With Learning More About Indiv. Instr. (Stage 1)		Extent of Student Influence On One's Program of Study (1=Little, 5=Much)		Number of Years on the Job Experience		Perceived Value of One's Program by Self (1= Not at all, 5= Very Highly)	
	Mean	Std. Dev.	Mean	Std. Dev.	Mode	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Western Texas	24.14	9.22	3.83	.98	MA/MS	23.57	4.20	2.71	.95	8.83	4.87	4.43	.53
Bee County	17.80	7.94	4.00	.74	BA/BS	23.20	5.47	2.90	.88	15.00	9.37	4.70	.48
Texarkana	19.00	7.53	4.33	.71	MA/MS	13.54	9.13	2.88	1.25	10.89	6.83	4.56	.53
Grayson	13.75	7.41	3.40	1.14	MA/MS	17.00	6.98	2.20	1.10	15.20	11.45	4.20	.84
Laredo	26.40	6.36	3.40	1.14	BA/BS	19.60	12.02	2.70	1.34	8.33	7.03	4.20	.84
Texas Southmost	21.71	6.87	4.11	.60	BA/BS	28.43	2.50	2.67	1.50	15.87	8.10	4.44	.53
Amarillo	22.33	6.83	4.00	.63	MA/MS	13.17	9.11	3.83	1.17	11.83	10.05	4.83	.41
St. Philip's	24.30	8.35	4.00	.67	MA/MS	24.00	5.05	2.50	1.58	10.43	7.72	4.50	.53
All Colleges	21.18	7.56	4.08	.771	MA/MS	20.69	6.81	2.73	1.22	12.35	8.18	4.52	.53

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RESULTS OF THE ACTION RESEARCH TEAM CASE STUDY

Formative and Summative Evaluation of the ART

As specified in the objectives of this study, the NOVA Project attempted to determine whether or not an indigenous action research team could be created, trained and installed within the occupation educational division of a selected community college within a one year period. As indicated earlier, the College of the Mainland was selected as the target institution.

In attempting to assess the success of this novel intervention, it was necessary to establish some criteria against which the progress made could be evaluated. The criteria selected were as follows:

1. Did the ART remain actively functioning over the calendar year period?
2. Was the composition of the ART appropriate for the task?
3. Was the ART able to devise its own problem area for analysis?
4. Was the ART able to be trained in accordance with ART procedures?
5. Was the ART able to operate in accordance with the process stipulated for an ART?
6. Was the ART able to make discernable progress toward accomplishment of the task they had selected for themselves?
7. Was the ART able to establish itself as an integral part of the college structure as reflected by acceptance received from administration, faculty and staff?
8. Was the ART able to establish itself as an integral part of the college structure as reflected by plans for its continuance beyond the original one year period?

The NOVA Project staff decided that it would be considered as evidence of the "success" of the project if it were possible to respond affirmatively to most, if not all, of the criteria specified above. These outcomes will now be examined.

Persistence of the ART

The ART was established as a result of consultation by the outside consultant to the team, Dr. Oscar G. Mink, with adminstrative personnel of the college. This consultation occured during the Fall, 1976. Approval was given by the president and the Dean's Council for "start-up" January, 1977. The team held its first meeting in mid-January and remained in continuous operation throughout the calendar year.

Composition of the ART

The composition of the membership of the ART was originally envisioned as being limited to representative personnel from among the Occupational Education Division of the College. In fact, that objective was not reached. In discussions with administrative personnel of the College, it was their preference that the ART be expanded in scope to be a college-wide committee rather than to limit this operation to any single division. The rationale for this was the belief that whatever areas were ultimately selected for consideration would likely have college-wide ramifications and therefore should include college-wide membership. The NOVA Project assented to this modification.

Membership on the ART was decided by the simple expedient of inviting voluntary participation from whomever was interested. The call for volunteers along with a general description of the purposes of the ART

was circulated to faculty and staff. This resulted in ten persons agreeing to participate. three of whom were from the Occupational Education Division. The membership of the ART included:

1. Dean, Student College Services
2. Associate Dean of Instruction
3. Department Chairman, Business Education
4. Instructor, Department within Occ-Tech
5. Instructor, Department of Business
6. Director of Staff Development
7. Director of Counseling Services
8. Instructor, Department of Physical Education
9. Associate Dean, Adult and Continuing Education
10. Instructor, Department of Psychology

The composition of the team varied somewhat over the 12 month period. Several of the original members requested to withdraw from the team. In response to a second invitation extended in the Summer, 1977, an additional five members volunteered to participate. As a result, at the end of the calendar year, there were 14 members of the team. The additional five members were:

1. Director of Institutional Research
2. Staff Member, Community Services
3. Instructor, Department of Mathematics
4. Instructor, Department of Nursing
5. Instructor, Department of English

In addition to these regular members and Dr. Mink, the external consultant responsible for training, the ART called in an additional consultant,

Dr. Harold A. Goolishian, a psychologist from the University of Texas Medical Branch at Galveston, to assist them.

Process Functioning of the ART

As indicated earlier, the NOVA Project was particularly interested in determining whether or not the process specified by the originators of the ART concept, Dr. Walter Sikes and his colleagues (Sikes et al., 1974) could and would be followed. For example, the NOVA Project was concerned whether a group, given the opportunity to self-select a problem for study, could agree upon target concern. Would the administration be willing to permit its functioning unimpeded? Could that group subsequently move successfully toward implementation of its objective?

In the opinion of both the process recorder and the external consultant these process steps were accomplished, though not without difficulty and lengthy deliberation. The ART had to establish itself initially as a viable group, first among the members themselves and then in its relationship with others at the College. Internally, it needed to establish interpersonal trust, allow for individual differences, engage in individual and group problem solving before achieving it own "celebration" as a group with its own identity. In its external relationships, ART members had to satisfy their concerns that they would be given the freedom to pursue the purposes of the team, that they would be permitted their independence from established administrative channels, and be able to familiarize themselves with the functioning of similar groups elsewhere. By means of the training given, they were ultimately able to feel comfortable with their unique role and function.

It is significant that a full three months was spent in accomplishing these necessary "establishment" tasks. The team also had to spend time educating itself regarding institutional change process. Having evolved an identity as institutional change agents, the team members were compelled to familiarize themselves with successful change "agentry" models. By May of 1977 the team was able to conclude that the task to be addressed should be promoting or rekindling a greater sense of community among faculty and staff, such as existed in the early days of the College's operation eight or nine years before. After that landmark was reached, the ART proceeded through the summer months to formulate means for acquiring interview and questionnaire data from fellow faculty and staff regarding their perceptions and recommendations relative to this issue. To enhance their own skills in interviewing, Dr. Goolishian was called in to provide needed training.

Data were compiled via interviews from some 36 individuals representing a cross-section of the College. Those interviewed included:

1. Two members of top administration
2. Four members of middle level administration (departmental chairpersons)
3. Four staff members.
4. Eight faculty members
5. Four secretarial/clerical persons
6. Five maintenance staff

The Fall term served as a period in which much of the aspirations of the ART came to fruition. Having had an opportunity to examine the

data collected, the team then proceeded to carry out intervention efforts aimed at promoting an increased sense of community.

In summary, the process followed by the ART has initiated a new force on the campus which has increased the awareness of all to the manner in which the college functions and the important interdependencies which exist among the component sectors of the College. Others outside the team have spontaneously initiated efforts of their own to enhance relationships on the campus. Members of the team report that the experience has required their acquiring new knowledges and skills, but has resulted most importantly in their (and perhaps others') renewed commitment and identification with the College. All these process indices are highly positive.

Identifying and Selecting a Target Area for Analysis

As indicated above, the ART was able to identify a mutually shared and vital topic of concern: rekindling a sense of community within the college. The selection of the task required more time than originally envisioned, but was clearly a task which emerged from the group itself.

Training of the ART in Accordance with ART Procedures

The concept of the ART as a vehicle for planned institutional change, was an entirely foreign concept to all those who subsequently became a part of that venture. Thus, the role of the external consultant was a vital one. Soon after the organization of the ART, the external consultant, Dr. Mink, met with the team to provide necessary orientation and background rationale regarding the task of the ART and the means for its implementation. While Dr. Mink continued to meet periodically with the

ART, many of its process difficulties were worked out by the team on its own. Additional contact was maintained through telephone conversations with the ART chairman who served as the internal consultant for the ART effort.

As suggested above, the training given to the ART extended beyond the originally conceived development of skills as ART members. At their own instigation, the ART sought and obtained additional specialized skills and knowledges required by the demands of the tasks they had selected.

Progress Toward Task Accomplishment

By Summer, 1977, the ART had begun an initial data gathering effort to acquire information about a perceived sense of community by faculty and staff. On the basis of these data, the steps were taken to carry out the following remediation.

1. A dialogue was begun within various existing campus groups on the topics.
2. An article was written which appeared in the Educational Development Services Newsletter.
3. The topic was incorporated as a discussion topic led by ART members as a part of Staff Development Days prior to the beginning of the Fall term.
4. All faculty and staff were invited to a picnic as a vehicle for bringing everyone together on an informal basis.
5. The ART received and accepted a request from the President to examine means for promoting employee satisfaction.
6. A Human Relations Resource Group was formed as a vehicle for

providing faculty and staff with human relations training.

7. The Chairman of the ART, the Director of Staff Development at the President's suggestion, now reports directly to the President in an effort to keep him better apprised of staff needs and actions taken.

The impact of the ART has extended considerably beyond the actual community-building activities they initiated. As word spread of the activities of the ART, there was an increased consciousness about the importance of the sense of community, resulting in individual efforts by non-ART members to promote community within their spheres of involvement. Highly visible progress clearly was made.

Acceptance of ART by Upper Level Administration and Peers

The extent to which the ART was accepted by top level administration and peers is difficult to state with precision. ART members reported initial ambivalence and apprehension regarding their acceptability to and independence from the administrative hierarchy. There may also have been a corresponding initial ambivalence on the part of the existing administrative structure regarding the ART. As a new mechanism on the campus, it was difficult to ignore the possible threat which the ART might constitute to the prevailing power structure. Once the group had identified its target and commenced its efforts it appeared as if those concerns were put to rest.

The most convincing evidence of the degree to which the ART has been accepted by the top level administration is the organizational

change which has given increased importance to the staff development function carried out by the ART chairman. The involvement of non-ART members in the Human Relations Training Group represents corresponding evidence of the impact and acceptability of the ART effort to peers.

Acceptance of ART as Reflected by Plans for Continuance

If the ART were to have disbanded itself at the end of the one year period, as originally planned, the evidence of its impact and utility to the College would be much more problematic. In fact, the ART has decided to continue in operation for an additional year. This decision has been agreed to by the members themselves and by administrative authority. This speaks well for the benefits which already have accrued to the college and to the ART members themselves. Given that all members of the team are extremely busy people with other involvements, and that no released time has been given them for the ART activities, it appears evident that their participation has seemed beneficial to them personally in enriching their professional development.

DISCUSSION

In this last section of the report, the most significant findings will be summarized and their implications discussed.

Major Findings of the Study

It is now appropriate to ask what were the major findings of the study. These results can be summarized as follows:

1. In all eight of the community colleges studied, there is extensive use of individualized instruction within the five categories of vocational-technical instruction.
2. The level of use of individualized instruction seems primarily at a mechanical to routine level of use. In the main, adoption of individualized instruction within the vocational-technical curricula is at a "consumer level", rather that at the level of "innovating on the innovation". Perhaps that latter role is seen as more appropriate for more research oriented institutions.
3. There are significant differences across the eight institutions both in their level of use (LoU), and in the extensiveness to which they incorporated the various aspects of individualized instruction (PSII) into their programs.
4. The differences found in the extent and level of use of individualized instruction are not merely the result of size or location of the institution. The small, rural community colleges were not necessarily lower in criterion scores than the larger, urban community colleges. Two colleges matched for similar size and location did not yield similar results.

5. There are significant differences across the five vocational-technical curricular programs of study in both LoU and PSII scores, suggesting that some programs of study see individualized instruction as lending itself more readily to usage with their subject matter than did others.
6. It is possible to predict on the basis of relatively few (seven) variables those instructors who will have high levels of use and will use comprehensively the various component attributes of individualized instruction. Seven variables account for 50% of the variance in predicting LoU, and six other variables (and one common one) predict 70% of the variance in PSII scores.
7. The predictor variables emerging in the prediction of both LoU and PSII scores were primarily Actor variables. Concern About Collaboration with Colleagues, a higher level Stage of Concern, emerged as the first extracted predictor for both regression equations. In predicting LoU, Cosmopolite Actor Variables emerged as important.
8. Contrary to expectations, Institutional variables did not emerge as significant predictors for either criterion.
9. The study failed to find evidence of a positive relationship between the mean Stage of Concern at which instructors at a particular community college were functioning and that college's Organizational Growth Stage. That result may be partly attributable to unreliability found in the rating of Organizational Growth Stages.
10. At the College of the Mainland, the effort to establish and install an Action Research Team (ART) was successful. The ART was formed, was able to formulate an institutional renewal project, and initiated steps

to implement that change effort. Indications are that the ART has continued to function beyond the one year trial period originally planned.

11. Methodologically speaking, the investigators found that it is difficult to carry out field research of the type envisioned in the proposal. Due to heavy work commitments it was not always possible for the participating community colleges to comply with requests for assistance. This resulted in some scaling down of planned efforts.

Implications of the Comparative Study

What has now been learned about the nature of innovation as illustrated through the use of an instructional innovation--individualized instruction--in eight Texas community colleges? First and foremost, the results point out that qualities of the instructors themselves, as opposed to qualities of the setting, are the predisposing factors most apt to account for those who do and don't manifest innovative behavior. The nature of these predisposing personal traits, as given in the two regression analyses, appears to point in a common direction: Innovation is carried out by those who have the related expertise to do so, who are in a circumstance in which they are sufficiently secure with respect to their personal status and that of their program to do so, and most importantly, who function at a high enough level that their concerns can focus upon finding better ways to collaborate with colleagues toward program improvement. In short, examining the seven emerging predictors in the multiple regression equations (Tables 19 and 21), it is clear that innovation is most likely to be initiated by those instructors functioning at upper levels of effectiveness.

The importance of this overall result may be better understood when contrasted with our folk wisdom about innovation. Consider for a moment the saying, "Necessity is the mother of invention." If one were to apply that same notion to instructional innovation in collegiate settings, one might expect innovation to be flowering within community colleges. These institutions are undergoing growth far in excess of that to be found in all other sectors of post-secondary education. Growth rates of 25 to 33% per annum are not unusual among community colleges, particularly within the voc-tech domain. This substantial growth surely may be expected to create dislocations in previously established procedures. It also may be expected to require recruiting and orienting of new staff, as well as taxing the capabilities of physical and personnel resources previously geared to accomodate far fewer students. If one adds to these circumstances the fact that considerable heterogeneity exists among students and that heavy teaching assignments exist, it becomes apparent that teaching in a community college environment is no simple task. Taken collectively, these circumstances provide ample opportunity for necessity to evidence itself.

In point of fact, the results of this study are not consonant with the "necessity" hypothesis. Rather, the findings are closer to supporting an "abundance" or "affluence" hypothesis. Consider for the moment the fact that "Collaboration with Colleagues" was the first emerging predictor in both regression equations. Persons functioning at that high level are operating from a position of psychological security. They appear to be persons who have a sense of confidence about the status of the program with which they are involved. They no longer need to be concerned with the adequacy of their own

personal performance. Instead, they may turn their attention to the needs of their students and the ways in which those students can be more adequately served. Toward that end, they are willing to expose what they are doing in the classroom to the scrutiny of their colleagues so that composite solutions can be worked out. Similarly, other predictors point to additional indications that those who innovate most are those who have the greatest resources with which to work. Those who are cosmopolite and have contact outside the college are likely to learn sooner about innovations; they may even have observed them in use. Thus, the conceptualization which emerges suggests that higher levels of instructional innovation emerge not out of conditions of relative adversity, but rather out of conditions of plenty, relative stability, and similar other favorable conditions.

If the above thesis is pursued, the next logical question pertains to the likelihood that such optimizing conditions are likely to obtain within community colleges. What hope is there that faculty within community college voc-tech programs can be helped to feel sufficiently secure in their teaching that innovative behavior can be expected from a significant proportion of them? It is of concern to the NOVA investigators that at the very time when significant new challenges are occurring for these institutions, the outlook for a creative response does not seem bright. Given the current period of financial constriction, heavy work schedules, increasing heterogeneity of students, and similar other pressures; it seems much more likely that voc-tech faculty as well as other instructors in community collges will apply yesterday's solutions to tomorrow's problems.

With the assistance of additional institutional resources and with a climate of encouragement for instructional innovation, the prospects can be greatly improved. Much support, both substantive and psychological, is needed. Instructional innovation takes time and effort that is not generally available. It is hard work. Fortunately, resourcing of the sort needed is already being provided in some community colleges by Staff Development Offices, and many more are establishing them. Even more useful is the support which top-level administration and colleagues migh be encouraged to provide.

It is not envisioned that community colleges should be expected to be primary generators of new instructional methodologies. That task should appropriately fall to those with the resources, skill, and time to do it; for example, research and development facilities, research-oriented universities, educational laboratories, and the like. The concern is whether or not community colleges can provide sufficiently effective resources to encourage the trial use of already developed and validated innovations on a broad scale. This would include relief from some teaching responsibilities to permit instructors to acquire necessary training, development of new curricular materials needed to implement the changes, and in other ways help for the faculty to gear up for the task.

The researchers recognize that any investigation intending to study the nature of innovative behavior can be questioned as to the adequacy of the criterion. Is the extent of use of individualized instruction a defensible criterion for innovation? Possibly not. The NOVA investigators are aware that individualized instruction still is a controversial instructional innovation. It may not always be the most appropriate teaching strategy. We are aware from

our own data (Tables 17 and 18) that voc-tech curricula differ in how well they lend themselves to use with individualized instruction. For these reasons, the results found here need to be replicated after further refinement of the criterion measures. Also, one wonders whether different results would obtain if other innovations were to be studied. Clearly, additional research of that sort is needed.

Having examined some of the most prominent findings, it is of interest to discuss two results which were expected, but which did not materialize. Perhaps the most surprising result of the research was that environment (setting) variables failed to emerge as significant determinants of either criterion. This outcome is not consistent with the theoretical rationale of this study, which posited a person/environment interaction basis for innovative behavior. In addition, this outcome is not consistent with other research findings which have identified setting variables as potent determinants (Rogers and Shoemaker, 1971). Why did setting variables not emerge among the significant predictors in this project? NOVA researchers believe that this lack may be attributable to the psychometric limitations of the measuring devices used. In one instance (SOCCOF), a standardized instrument was adapted and in a second case (OGS), an entirely new instrument had to be devised. On the basis of the responses to both of these instruments, it appears that there was some respondent resistance to the task, as reflected by incomplete responses on a number of protocols. Length of the task may have been a factor. Further refinements of both the subjective environment measures should enhance both instruments. We prefer to conduct additional trials with these instruments before discarding the person/environment thesis.

The study also failed to provide support for a second expected outcome. Adopting a developmental perspective, the NOVA investigators posited that organizations like individuals are at varying stages of development. More important, the higher the stage a community college is in its organizational development, the higher the developmental stage at which personnel within that institution will be functioning (as measured by the Stages of Concern Questionnaire). This exciting hypothesis resulted in the development of the OGS instrument. As indicated in Table 11, the results failed to support a one-to-one correspondence between person and organization. Perhaps the impact of organizational stages of development is confounded by additional variables either within or without the college which affect individual functioning. In addition, the conceptual base for the OGS was limited by the global descriptions provided by Lippitt (1972) in his model of organizational development. Further clarification of the stages posited by Lippitt may help provide clearer differentiation among stages in a revised instrument.

Finally, the NOVA investigators were pleased by the results of the regression analyses performed. The fact that in one instance 50% and in the other case 70% of the variance in the two criteria were accounted for indicates that innovative behavior is a phenomenon which is amenable to empirical investigation. We feel we have isolated some key person variables associated with the behavior. We believe that with further refinement, additional setting variables will come to light as additional predictors. Given the importance of continuing innovative efforts within voc-tech programs, we hope that the study will serve to encourage further research of this sort.

Implications of the Action Research Team Study

The adoption and use at a high level of instructional innovations can be thought of as a particular instance of institutional change and renewal. In the same way that we have sought to identify factors which facilitate or impede the adoption and use of instructional innovation, the same question can be asked relative to other types of change efforts intended to improve organizational effectiveness. The effectiveness of the Action Research Team at the College of the Mainland can be considered within this larger context. What has been learned about the process of institutional change within a community college from this case study? The limited obejctives set forth for the ART were reached: An ART was established; it was able to identify an important need which did exist and it was able to initiate corrective steps aimed at addressing that need. At the same time, the very novelty of the ART underscores an important truth about the College of the Mainland and probably about most community colleges. Community colleges are primarily oriented to invest personnel and other resources in the maintenance function. They are considerably less well disposed to commit resources to engage in the renewal or change function.

Consider the conditions under which the ART operated. Their year-long efforts, while sanctioned by upper-level administration, had to be conducted on an "in-addition-to-your-other-duties" basis. In short, the activities "came out of the participants' hides." Whereas many organizations in the private enterprise sector have extensive evaluation and planning resources, such efforts have not yet been sufficiently legitimized to make possible their availability within most community colleges. Perhaps it is thought

that such activity is a luxury which would never be supported by tax-conscious Boards, and ultimately by taxpayers. Especially during the current period of community college growth, the need is great for on-going mechanisms for change within colleges' normal structures. Perhaps, ad-hoc, voluntary groups like the ART will be sufficiently successful to demonstrate their utility, and will encourage forward-looking community colleges to establish more permanent mechanisms to carry out the critical renewal function. It is hoped that the ART work at the College of the Mainland provided some impetus in this direction.

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APPENDICES

APPENDIX A

LoU CHART: A FRAMEWORK FOR ANALYZING INNOVATION ADOPTION AND FORMAT FOR THE LoU INTERVIEW

LEVELS OF USE

LoU CHART

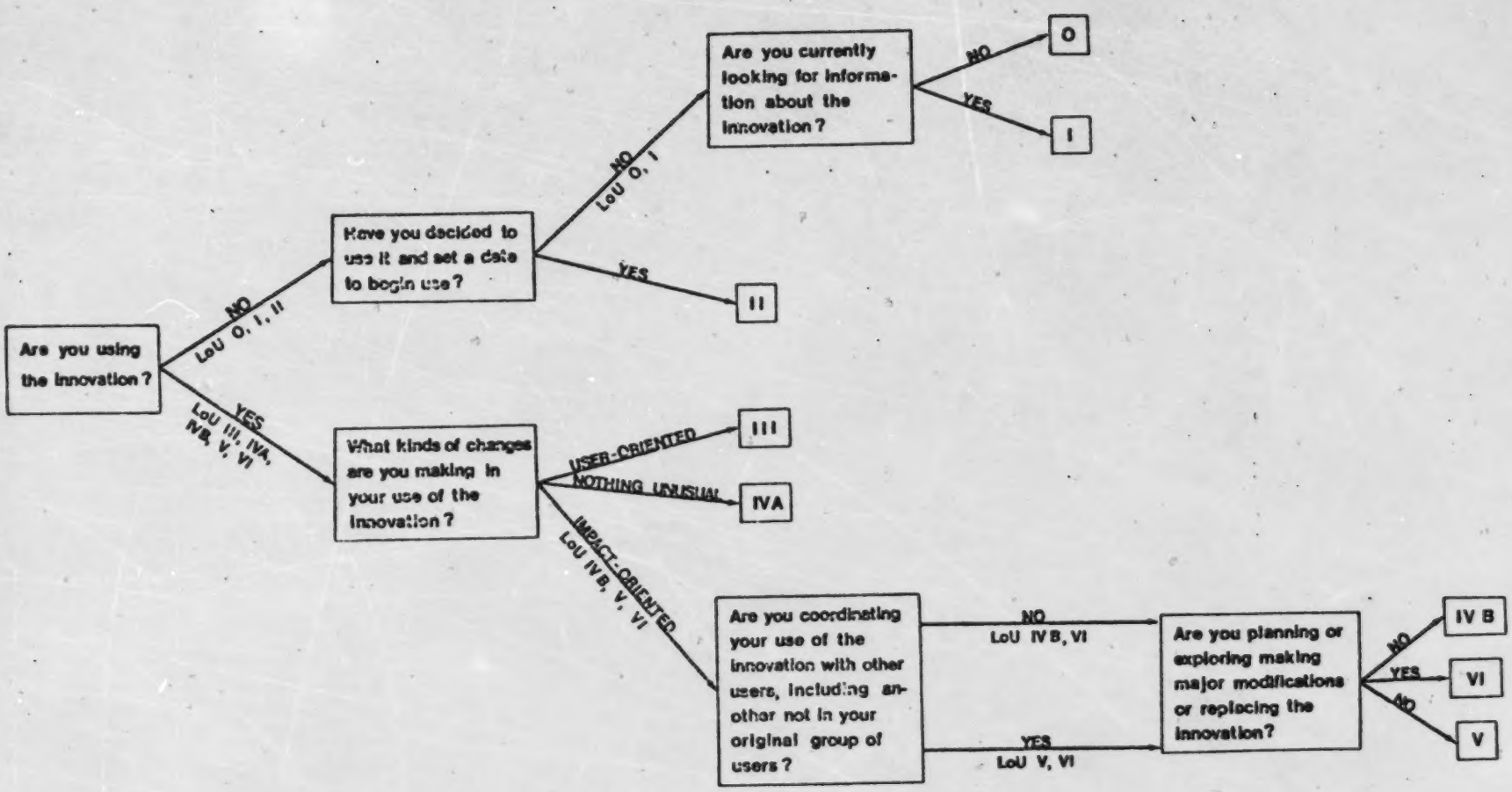
SCALE POINT DEFINITIONS OF THE LEVELS OF USE OF THE INNOVATION	CATEGORIES		
Levels of Use are distinct states that represent observably different types of behavior and patterns of innovation use as exhibited by individuals and groups. These levels characterize a user's development in acquiring new skills and varying use of the innovation. Each level encompasses a range of behaviors, but is limited by a set of identifiable Decision Points. For descriptive purposes, each level is defined by seven categories.	**KNOWLEDGE** **That which the user knows about characteristics of the innovation, how to use it, and consequences of its use. This is cognitive knowledge related to using the innovation, not feelings or attitudes.**	**ACQUIRING INFORMATION** **Solicits information about the innovation in a variety of ways, including questioning resource persons, corresponding with resource agencies, reviewing printed materials, and making visits.**	**SHARING** **Discusses the innovation with others. Shares plans, ideas, resources, outcomes, and problems related to use of the innovation.**
LEVEL 0 **NON-USE:** State in which the user has little or no knowledge of the innovation, no involvement with the innovation, and is doing nothing toward becoming involved.	Knows nothing about this or similar innovations or has only very limited general knowledge of efforts to develop innovations in the area.	Takes little or no action to solicit information beyond reviewing descriptive information about this or similar innovations when it happens to come to personal attention.	Is not communicating with others about the innovation beyond possibly acknowledging that the innovation exists.
DECISION POINT A	*Takes action to learn more detailed information about the innovation.*		
LEVEL I **ORIENTATION:** State in which the user has acquired or is acquiring information about the innovation and/or has explored or is exploring its value orientation and its demands upon user and user system.	Knows general information about the innovation such as origin, characteristics, and implementation requirements.	Seeks descriptive material about the innovation. Seeks opinions and knowledge of others through discussions, visits, or workshops.	Discusses the innovation in general terms and/or exchanges descriptive information, materials, or ideas about the innovation and possible implications of its use.
DECISION POINT B	*Makes a decision to use the innovation by establishing a time to begin.*		
LEVEL II **PREPARATION:** State in which the user is preparing for first use of the innovation.	Knows logistical requirements, necessary resources and timing for initial use of the innovation, and details of initial experiences for clients.	Seeks information and resources specifically related to preparation for use of the innovation in own setting.	Discusses resources needed for initial use of the innovation. Joins others in pre-use training, and in planning for resources, logistics, schedules, etc., in preparation for first use.
DECISION POINT C	Begins use of the innovation.		
LEVEL III **MECHANICAL USE:** State in which the user focuses most effort on the short-term, day-to-day use of the innovation with little time for reflection. Changes in use are made more to meet user needs than client needs. The user is primarily engaged in a stepwise attempt to master the tasks required to use the innovation, often resulting in disjointed and superficial use.	Knows on a day-to-day basis the requirements for using the innovation. Is more knowledgeable on short-term activities and effects than long-range activities and effects of use of the innovation.	Solicits management information about such things as logistics, scheduling techniques, and ideas for reducing amount of time and work required of user.	Discusses management and logistical issues related to use of the innovation. Resources and materials are shared for purposes of reducing management, flow and logistical problems related to use of the innovation.
DECISION POINT D-1	*A routine pattern of use is established.*		
LEVEL IV A **ROUTINE:** Use of the innovation is stabilized. Few if any changes are being made in ongoing use. Little preparation or thought is being given to improving innovation use or its consequences.	Knows both short- and long-term requirements for use and how to use the innovation with minimum effort or stress.	Makes no special efforts to seek information as a part of ongoing use of the innovation.	Describes current use of the innovation with little or no reference to ways of changing use.
DECISION POINT D-2	*Changes use of the innovation based on formal or informal evaluation in order to increase client outcomes.*		
LEVEL IV B **REFINEMENT:** State in which the user varies the use of the innovation to increase the impact on clients within immediate sphere of influence. Variations are based on knowledge of both short- and long-term consequences for clients.	Knows cognitive and affective effects of the innovation on clients and ways for increasing impact on clients.	Solicits information and materials that focus specifically on changing use of the innovation to affect client outcomes.	Discusses own methods of modifying use of the innovation to change client outcomes.
DECISION POINT E	*Initiates changes in use of innovation based on input of and in coordination with what colleagues are doing.*		
LEVEL V **INTEGRATION:** State in which the user is combining own efforts to use the innovation with related activities of colleagues to achieve a collective impact on clients within their common sphere of influence.	Knows how to coordinate own use of the innovation with colleagues to provide a collective impact on clients.	Solicits information and opinions for the purpose of collaborating with others in use of the innovation.	Discusses efforts to increase client impact through collaboration with others on personal use of the innovation.
DECISION POINT F	*Begins exploring alternatives to or major modifications of the innovation presently in use.*		
LEVEL VI **RENEWAL:** State in which the user re-evaluates the quality of use of the innovation, seeks major modifications of or alternatives to present innovation to achieve increased impact on clients, examines new developments in the field, and explores new goals for self and the system.	Knows of alternatives that could be used to change or replace the present innovation that would improve the quality of outcomes of its use.	Seeks information and materials about other innovations as alternatives to the present innovation or for making major adaptations in the innovation.	Focuses discussions on identification of major alternatives or replacements for the current innovation.

Procedures for Adopting Educational Innovations Project, Research and Development Center for Teacher Education, University of Texas at Austin, 1975, N.I.E. Contract No. NIE-C-74-0087.

LoU CHART

CATEGORIES

ASSESSING	PLANNING	STATUS REPORTING	PERFORMING
Examines the potential or actual use of the innovation or some aspect of it. This can be a mental assessment or can involve actual collection and analysis of data.	**Designs and outlines short- and/or long-range steps to be taken during process of innovation adoption, i.e., aligns resources, schedules activities, meets with others to organize and/or coordinate use of the innovation.**	**Describes personal stand at the present time in relation to use of the innovation.**	**Carries out the actions and activities entailed in operationalizing the innovation.**
Takes no action to analyze the innovation, its characteristics, possible use, or consequences of use.	Schedules no time and specifies no steps for the study or use of the innovation.	Reports little or no personal involvement with the innovation.	Takes no discernible action toward learning about or using the innovation. The innovation and/or its accouterments are not present or in use.
Analyzes and compares materials, content, requirements for use, evaluation reports, potential outcomes, strengths and weaknesses for purpose of making a decision about use of the innovation.	Plans to gather necessary information and resources as needed to make a decision for or against use of the innovation.	Reports presently orienting self to what the innovation is and is not.	Explores the innovation and requirements for its use by talking to others about it, reviewing descriptive information and sample materials, attending orientation sessions, and observing others using it.
Analyzes detailed requirements and available resources for initial use of the innovation.	Identifies steps and procedures entailed in obtaining resources and organizing activities and events for initial use of the innovation.	Reports preparing self for initial use of the innovation.	Studies reference materials in depth, organizes resources and logistics, schedules and receives skill training in preparation for initial use.
Examines own use of the innovation with respect to problems of logistics, management, time, schedules, resources, and general reactions of clients.	Plans for organizing and managing resources, activities, and events related primarily to immediate ongoing use of the innovation. Planned-for changes address managerial or logistical issues with a short-term perspective.	Reports that logistics, time, management, resource organization, etc., are the focus of most personal efforts to use the innovation.	Manages innovation with varying degrees of efficiency. Often lacks anticipation of immediate consequences. The flow of actions in the user and clients is often disjointed, uneven and uncertain. When changes are made, they are primarily in response to logistical and organizational problems.
Limits evaluation activities to those administratively required, with little attention paid to findings for the purpose of changing use.	Plans intermediate and long-range actions with little projected variation in how the innovation will be used. Planning focuses on routine use of resources, personnel, etc.	Reports that personal use of the innovation is going along satisfactorily with few if any problems.	Uses the innovation smoothly with minimal management problems; over time, there is little variation in pattern of use.
Assesses use of the innovation for the purpose of changing current practices to improve client outcomes.	Develops intermediate and long-range plans that anticipate possible and needed steps, resources, and events designed to enhance client outcomes.	Reports varying use of the innovation in order to change client outcomes.	Explores and experiments with alternative combinations of the innovation with existing practices to maximize client involvement and to optimize client outcomes.
Appraises collaborative use of the innovation in terms of client outcomes and strengths and weaknesses of the integrated effort.	Plans specific actions to coordinate own use of the innovation with others to achieve increased impact on clients.	Reports spending time and energy collaborating with others about integrating own use of the innovation.	Collaborates with others in use of the innovation as a means for expanding the innovation's impact on clients. Changes in use are made in coordination with others.
Analyzes advantages and disadvantages of major modifications or alternatives to the present innovation.	Plans activities that involve pursuit of alternatives to enhance or replace the innovation.	Reports considering major modifications of or alternatives to present use of the innovation.	Explores other innovations that could be used in combination with or in place of the present innovation in an attempt to develop more effective means of achieving client outcomes.


Are you using the innovation?
NO
LoU 0, I, II
YES
LoU III, IVA, IVB, V, VI
Have you decided to use it and set a date to begin use?
NO
LoU 0, I
YES
II
Are you currently looking for information about the innovation?
NO
0
YES
I
What kinds of changes are you making in your use of the innovation?
USER-ORIENTED
III
NOTHING UNUSUAL
IVA
IMPACT-ORIENTED
LoU IVB, V, VI
Are you coordinating your use of the innovation with other users, including another not in your original group of users?
NO
LoU IVB, VI
YES
LoU V, VI
Are you planning or exploring making major modifications or replacing the innovation?
NO
IV B
YES
VI
NO
V

APPENDIX B

INSTRUMENTATION USED IN THE COMPARATIVE STUDY

APPENDIX B-1

PERSONALIZED SYSTEMATIC INSTRUCTION INVENTORY (PSII)

Name _____

Course _____

School _____

CREATING AN ENVIRONMENT FOR LEARNING:

PERSONALIZED SYSTEMATIC INSTRUCTION INVENTORY

Developed by

Barbara P. Washburn and Oscar G. Mink

DIRECTIONS: Please respond to each of the following statements by circling the number from 0 to 5 which most accurately represents your instructional practice where:

0 = NOT AT ALL
1 = TO A VERY LITTLE EXTENT
2 = TO A LITTLE EXTENT
3 = TO SOME EXTENT
4 = TO A GREAT EXTENT
5 = TO A VERY GREAT EXTENT

1.	Students have the option of taking a comprehensive course exam if they feel that they have sufficient skills to be exempted from the course.	0	1	2	3	4	5
2.	A diagnostic pretest is given on unit objectives to determine a student's present achievement level.	0	1	2	3	4	5
3.	Based upon pretest results, a student may be exempted from a portion of the unit objectives or an entire unit.	0	1	2	3	4	5
4.	Evaluation results are reported according to objectives mastered at a competency level rather than as an average letter or number grade, e.g., correctly solving nine out of ten algebraic equations with one unknown.	0	1	2	3	4	5
5.	For each unit there is an established standard or level of mastery of acceptable learner performance on the objectives that must be met before a student can move on to the next instructional unit.	0	1	2	3	4	5
6.	Criteria referenced mastery levels may be negotiated and modified through instructor-student negotiations. (Pertains to one or more course grades--A,B,or C level).	0	1	2	3	4	5

Page 2
P. S.I.I.

0 = not at all
1 = to a very little extent
2 = to a little extent
3 = to some extent
4 = to a great extent
5 = to a very great extent

7. Students are tested on necessary prerequisite knowledge and skills and are provided materials and instruction necessary to remedy deficiencies.	0	1	2	3	4	5
8. There is an opportunity for a student to evaluate his own achievement of objectives through self-testing, feedback, and self-correction of errors.	0	1	2	3	4	5
9. Students are allowed as much time as possible to master a topic.	0	1	2	3	4	5
10. Students are given the option of taking course tests at different times.	0	1	2	3	4	5
11. Students are allowed to restudy unmastered course objectives and retake tests to attain mastery.	0	1	2	3	4	5
12. There are at least two different tests or methods to measure each objective.	0	1	2	3	4	5
13. Students may receive an "in progress" or "incomplete" grade at the end of the institutional grading period and be allowed to continue working into a succeeding term to master course objectives.	0	1	2	3	4	5
14. Students may complete a course prior to the end of the instructional grading period.	0	1	2	3	4	5
15. Students have a choice as to the content "their" course will contain by being allowed to contract with the instructor for mutually agreed upon objectives.	0	1	2	3	4	5
16. A general atmosphere of freedom (self-direction) for the student prevails in the classroom.	0	1	2	3	4	5
17. Students may select learning options.	0	1	2	3	4	5
18. Students may negotiate learning contracts.	0	1	2	3	4	5
19. Students may suggest learning experiences.	0	1	2	3	4	5
20. Provision is made for individual differences in student self-direction, student self-initiative, and student self-responsibility.	0	1	2	3	4	5
21. The college's instructional system is designed to eliminate failing grades.	0	1	2	3	4	5
22. The student receives no grade until he has mastered the objectives.	0	1	2	3	4	5
23. If necessary, students may spend at least a year studying a semester's course.	0	1	2	3	4	5

Page 3
P.S.I.

0 = not at all
1 = to a very little extent
2 = to a little extent
3 = to some extent
4 = to a great extent
5 = to a very great extent

24.	If a student finishes a course early, he is able to move immediately into the next course in the sequence or into another course of his choosing.	0	1	2	3	4	5
25.	Academic policy permits a student to "test out" of all or part of the course through pretesting.	0	1	2	3	4	5
26.	The student can control the information flow and repeat any portion not understood.	0	1	2	3	4	5
27.	The course is organized so that students can proceed with a minimum of reliance on the instructor for direction.	0	1	2	3	4	5
28.	Course goals communicating major conceptual and behavioral outcomes are provided in writing for the students at the beginning of the course.	0	1	2	3	4	5
29.	After consultation with students, behaviorally stated end-of-course (terminal) objectives are communicated in writing to the students.	0	1	2	3	4	5
30.	After consultation with students, behaviorally stated unit objectives are developed and shared with the students in writing.	0	1	2	3	4	5
31.	Objectives are written in at least two of the following domains: cognitive (mental skills), affective (feelings or attitudes), psychomotor (manual skills).	0	1	2	3	4	5
32.	Students are allowed to help formulate the implementation of learning exercises tied to the course or unit objectives by designing some portion of the class sessions.	0	1	2	3	4	5
33.	Instruction includes activities designed to improve interpersonal relationship skills of students.	0	1	2	3	4	5
34.	The instructor builds process exercises (interpersonal skill development) into the course.	0	1	2	3	4	5
35.	Students are given opportunities to manage some group learning activities.	0	1	2	3	4	5
36.	More than fifty percent of the course objectives have two or more learning activities--e.g., lectures, readings, slide/tape presentations--available to students to aid them in mastering course objectives.	0	1	2	3	4	5
37.	Prior to the formal evaluation situation, learning activities allow for students to practice in a variety of modes in order to achieve the stated unit objectives.	0	1	2	3	4	5
38.	Instructional materials are portable.	0	1	2	3	4	5

Page 4
P.S.I.I.

0 = not at all
1 = to a very little extent
2 = to a little extent
3 = to some extent
4 = to a great extent
5 = to a very great extent

39.	Students are given opportunities to participate in some group learning activities.	0	1	2	3	4	5
40.	Students are given explicit instructions.	0	1	2	3	4	5
41.	Course material is broken into short segments.	0	1	2	3	4	5
42.	Opportunity is given in the classroom or the laboratory for frequent practice.	0	1	2	3	4	5
43.	Students are provided immediate feedback or knowledge of results of learning attempts.	0	1	2	3	4	5
44.	Students are given positive reinforcers for mastery of objectives or subcomponents thereof.	0	1	2	3	4	5
45.	Alternative assessment methods such as oral exams, performance tests, situational tests, observations, behavioral checklists or self reports may be employed in addition to or in lieu of paper and pencil tests.	0	1	2	3	4	5
46.	In addition to lecture, discussion and reading--other group learning activities are employed, e.g., resource persons, audio-tutorial methods, films, role plays, games, field projects.	0	1	2	3	4	5
47.	Students are given a "rationale" or told "how" the course may be important to them.	0	1	2	3	4	5
48.	Effort is made to assist students in relating course content to future student goals and interests such as careers.	0	1	2	3	4	5
49.	Instructor believes that (if they are given enough time and appropriate instruction,) most (or all) students can master the course.	0	1	2	3	4	5
50.	Although the instructor creates a learning environment permitting free exploration and pacing, environmental limits (how many learning options, or limits on availability of materials) are made clear at the beginning of the course.	0	1	2	3	4	5
51.	Students are encouraged to "make friends" and to assist each other.	0	1	2	3	4	5
52.	Vocational counseling and standardized testing are available to students on a referral or self-referral basis.	0	1	2	3	4	5
53.	Academic counseling, including development of study skills is available to students on a referral or self-referral basis.	0	1	2	3	4	5

Page 5
P.S.I.I.

0 = not at all
1 = to a very little extent
2 = to a little extent
3 = to some extent
4 = to a great extent
5 = to a very great extent

54. Instructor consults with counselors about student needs on a regular basis.	0	1	2	3	4	5
55. Students may enroll in a separate course on "How to Study."	0	1	2	3	4	5
56. Instructor uses counselors as curriculum and instructional consultants.	0	1	2	3	4	5
57. Instructor uses peer tutors.	0	1	2	3	4	5
58. One peer tutor is assigned to no more than 19 students.	0	1	2	3	4	5
59. Instructor utilizes peer counselors.	0	1	2	3	4	5
60. Student development of a positive self-concept is stressed.	0	1	2	3	4	5
61. There is information gathered concerning the student's opinion of the content of the course which is used in revising course content.	0	1	2	3	4	5
62. New information regarding course subject matter is used in revising the course content at least every two years.	0	1	2	3	4	5
63. Information is gathered on the student's opinion of the methods of instruction employed in the course which is used in revising instructional activities.	0	1	2	3	4	5
64. Students who wish to go beyond required criteria on certain units or chapters may do so.	0	1	2	3	4	5
65. Students may select other options such as building new units or functioning as resource personnel and/or peer tutors.	0	1	2	3	4	5
66. Student input of topics for subject content is included in the course design.	0	1	2	3	4	5
67. Instructor makes provision for students to "quest" or to move out on their own and personally devise objectives, learning activities, and resources--both individually and in groups.	0	1	2	3	4	5
68. The learning activities are sequenced from simple to complex.	0	1	2	3	4	5
69. The objectives are appropriate to the current learning level or competencies of the individual student as well as to the level of his particular sub-group in the target population.	0	1	2	3	4	5
70. Learning activities are appropriate to the complexity (level) and nature (cognitive or affective domain) of course objectives.	0	1	2	3	4	5

Page 6
P.S.I.I.

0 = not at all
1 = to a very little extent
2 = to a little extent
3 = to some extent
4 = to a great extent
5 = to a very great extent

71.	Learning activities provide for frequent practice and active participation by students in the learning process. (Students may learn by doing).	0	1	2	3	4	5
72.	The student is able to contract for the grade for which he wishes to strive, e.g., A, B, or C.	0	1	2	3	4	5
73.	Contract renegotiation upward or downward is acceptable.	0	1	2	3	4	5
74.	At least fifty percent of the specific course objectives in the cognitive domain involve more than student comprehension of subject content, e.g., interpretation, extrapolation, application, analysis, synthesis, and evaluation. (See Bloom's Taxonomy).	0	1	2	3	4	5
75.	Prerequisite skill checklists are made available to the students for the course.	0	1	2	3	4	5
76.	Students know what competencies they must bring to the course in order to do the work of the course.	0	1	2	3	4	5
77.	Students may determine where, when and how to use the instructional materials.	0	1	2	3	4	5
78.	As an instructor, I am a diagnostician.	0	1	2	3	4	5
79.	As an instructor, I am a motivator.	0	1	2	3	4	
80.	As an instructor, I am a tutor.	0	1	2	3	4	
81.	As an instructor, I am willing to share accountability for learning with the students.	0	1	2	3	4	5
82.	As an instructor,I am a manager of learning.	0	1	2	3	4	
83.	I use the testing center personnel as consultants.	0	1	2	3	4	
84.	I consults with audio-visual specialists regarding production and review of alternate learning materials.	0	1	2	3	4	5
85.	Materials I have developed are made available to students through the learning resource center.	0	1	2	3	4	
86.	Students may take tests for my units through the testing center.	0	1	2	3	4	5
87.	I consult with instructional development specialists on a regular basis.	0	1	2	3	4	5
88.	I think that it is important to encourage students to develop self-esteem.	0	1	2	3	4	5

Page 7
P.S.I.I.

0 = not at all
1 = to a very little extent
2 = to a little extent
3 = to some extent
4 = to a great extent
5 = to a very great extent

89.	I actively work to help each student to believe that s/he can control the "payoffs" (outcomes) in her/his academic life.	0	1	2	3	4	5
90.	I work to encourage students to experience success.	0	1	2	3	4	5
91.	I work to encourage students to develop a success expectancy.	0	1	2	3	4	5
92.	I encourage my students to recognize and accept personal responsibility for success and failure.	0	1	2	3	4	5
93.	I encourage my students to believe that success is more a result of hard work than good luck.	0	1	2	3	4	5

APPENDIX B-2

BACKGROUND INFORMATION FORM

BACKGROUND INFORMATION FORM

Directions: The following personal, educational, and professional information is being requested so that we can identify the overall characteristics of the persons cooperating with us in our study efforts. All information will be regarded as completely confidential and only results for your college as a whole will be reported. Please respond to the following items in the spaces provided.

1. Name: _____
   Last First Middle Initial
2. Social Security Number: _____:___:_____
3. Sex: _____ Male _____ Female
4. Racial Ethnic Background:

   1) _____ Afro-American (Black)
   2) _____ Euro-American (White)
   3) _____ Mexican-American (Chicano)
   4) _____ Native-American (American Indian)
   5) _____ Oriental-American
   6) _____ Other (Please Specify) _____

5. Name of college where you work: _____
6. Number of years you have worked at this college: _____
7. Total number of years of teaching experience: _____
8. Number of years of on-the-job experience, if any, in addition to your teaching experience: _____
9. Primary subject you teach: _____
10. Indicate the highest degree you have completed:

    1) _____ High School diploma or equivalent
    2) _____ A.A./A.S.
    3) _____ B.A./B.S.
    4) _____ M.A./M.S.
    5) _____ Other (Please Specify) _____

11. With which vocational education program are you primarily involved?
    _____
12. How many hours per week do you spend in direct instruction activities (classroom, lab, etc.)?

    1) _____ less than 6 hours
    2) _____ 7 to 10 hours
    3) _____ 11 to 14 hours
    4) _____ 15 to 18 hours
    5) _____ 19 to 25 hours
    6) _____ 26 to 30 hours
    7) _____ 30 hours or more

13. How many hours per week do you spend in instruction-related activities, such as office hours, preparation, placement, advisory committee meetings, etc?

1) _____ 1 to 5 hours
2) _____ 6 to 10 hours
3) _____ 11 to 15 hours
4) _____ 16 to 20 hours
5) _____ more than 20 hours

14. Approximately how many students are enrolled in all of your classes at present? _____

15. Average number of students per class: _____

16. How highly do you value the vocational education program with which you are primarily involved? Circle the appropriate number.

1	2	3	4	5
Not at all	Only Slightly	Somewhat	Highly	Very Highly

17. How highly do others within the vocational education division at your college appear to value this program? Circle the appropriate number.

1	2	3	4	5
Not at all	Only Slightly	Somewhat	Highly	Very Highly

18. How highly do people at your college outside the vocational education division appear to value this program? Circle the appropriate number.

1	2	3	4	5
Not at all	Only Slightly	Somewhat	Highly	Very Highly

19a. How many workshops, conferences, meetings, have you attended in the past six years which focused upon individualized instruction? Circle the appropriate number.

0 1 2 3 4 5 6 7 8 9 or more

19b. Considering these workshops, conferences, and meetings, approximately how many hours of participation would they represent all together?

1) _____ none
2) _____ 1 to 3 hours
3) _____ 4 to 7 hours
4) _____ 8 to 15 hours
5) _____ 16 to 25 hours
6) _____ 26 to 35 hours
7) _____ 36 to 50 hours
8) _____ Over 50 hours

20. Please list the professional organizations of which you are a member and office held (if any).

Organizations	Office Held
1) _____	_____
2) _____	_____
3) _____	_____
4) _____	_____
5) _____	_____
6) _____	_____
7) _____	_____

21. Please list any publications (trade journals, magazines,etc.) related to your professional area to which you subscribe or read regularly.

1) _____ 7) _____
2) _____ 8) _____
3) _____ 9) _____
4) _____ 10) _____
5) _____ 11) _____
6) _____ 12) _____

22. How many hours per week do you spend,on the average, in non-required reading of professional journals or other materials related to your field?

1) _____ None
2) _____ 1 hour or less
3) _____ 2 to 3 hours
4) _____ 4 to 6 hours
5) _____ 7 to 10 hours
6) _____ 11 to 15 hours
7) _____ 16 hours or more

23. How many friends or acquaintances do you have at <u>other</u> educational institutions who work in the same subject area as you do?

1) _____ None
2) _____ One
3) _____ 2 to 3
4) _____ 4 to 6
5) _____ 7 to 10
6) _____ 11 to 15
7) _____ 16 or more

24. How many friends at <u>other</u> settings do you talk to or correspond with (at least three times a year) concerning professional issues in your field?

1) _____ None
2) _____ One
3) _____ 2 to 3
4) _____ 4 to 6
5) _____ 7 to 10
6) _____ 11 to 15
7) _____ 16 or more

25. How many friends at <u>your</u> institution do you talk with (at least three times a year) concerning professional issues in your field?

1) _____ None
2) _____ One
3) _____ 2 to 3
4) _____ 4 to 6
5) _____ 7 to 10
6) _____ 11 to 15
7) _____ 16 or more

26. How many persons in your field whom you did not know personally did you try to make contact with over the last three years regarding some professional issue?

1) _____ None
2) _____ One
3) _____ 2 to 3
4) _____ 4 to 6
5) _____ 7 to 10
6) _____ 11 to 15
7) _____ 16 or more

27. How many professional publications, papers, or talks related to your field have you written/given over the last three years?

1) _____ None
2) _____ One
3) _____ 2 to 3
4) _____ 4 to 6
5) _____ 7 to 10
6) _____ 11 to 15
7) _____ 16 or more

28. In comparison with others in your professional area, how would you rate yourself with respect to the degree to which you keep up with new developments in the field? Circle the appropriate number.

1	2	3	4	5	6	7	8	9	10
Much Less So Than Others								Much More So Than Others	

29. Think of four significant individuals within your community college setting for whom you have a high degree of professional respect. Please enter their names and positions below.

	Name	Position
1)	_____	_____
2)	_____	_____
3)	_____	_____
4)	_____	_____

30. Now, please rate on a scale from 1 to 10, the degree to which each of these individuals has influence over, or direct impact upon your professional judgment, opinions, and activities as they relate to your use of individualized instruction. Circle the appropriate number.

	1	2	3	4	5	6	7	8	9	10
Individual #1	Very Little Influence									Very Much Influence
Individual #2	1	2	3	4	5	6	7	8	9	10
Individual #3	1	2	3	4	5	6	7	8	9	10
Individual #4	1	2	3	4	5	6	7	8	9	10

31. For these same individuals, please rate the degree to which you have influence over or direct impact upon their professional judgments, opinions, and activities as they relate to their use of individualized instruction. Circle the appropriate number.

	1	2	3	4	5	6	7	8	9	10
Individual #1	1	2	3	4	5	6	7	8	9	10
Individual #2	1	2	3	4	5	6	7	8	9	10
Individual #3	1	2	3	4	5	6	7	8	9	10
Individual #4	1	2	3	4	5	6	7	8	9	10
	Very Little Influence									Very Much Influence

32. To what degree do you think people come to you (as opposed to others) for professional information and advice? Circle the appropriate number.

1 2 3 4 5 6 7 8 9 10
Very Little Very Great

33. To what degree do you perceive yourself as a leader within your program area? Circle the appropriate number.

1 2 3 4 5 6 7 8 9 10
Very Little Very Great

34. How probable is it that you would be called to participate in the making of a policy decision affecting your program area? Circle the appropriate number.

1 2 3 4 5 6 7 8 9 10
Highly Improbable Highly Probable

35. What is your position at the college? _____

NOTE: Please read these answer categories over carefully. Then answer each of the following questions by circling the number of the answer you want to give.

1 = Little or no influence
2 = Some influence
3 = Quite a bit of influence
4 = A great deal of influence
5 = A very great deal of influence

IN GENERAL, HOW MUCH SAY OR INFLUENCE DOES EACH OF THE FOLLOWING GROUPS OF PEOPLE HAVE ON WHAT GOES ON IN YOUR DEPARTMENT?

36. In general, how much say or influence do you have on what goes on in your department? 1 2 3 4 5

37. Lowest-level supervisors (department chairpersons, supervisors, etc)? 1 2 3 4 5

38. Top administration (president, vice presidents, deans of large divisions, etc.)? 1 2 3 4 5

39. Students? 1 2 3 4 5

40. Middle administration (division heads, area managers, associate deans, etc.)? 1 2 3 4 5

41. Staff and faculty (professionals who have no subordinates)? 1 2 3 4 5

42. Board of Trustees? 1 2 3 4 5

43. Advisory Boards (representatives from business and industry to your department)? 1 2 3 4 5

44. Faculty Senate or equivalent? 1 2 3 4 5

APPENDIX B-3

ADULT NOWICKI-STRICKLAND INTERNALITY-EXTERNALITY

(ANSIE) SCALE (OPINION SURVEY)

Name _____

OPINION SURVEY

Code Number _____

INSTRUCTIONS:

Below are a number of questions about various topics. They have been collected from different groups of people and represent a variety of opinions. There are no right or wrong answers to this questionnaire, we are only interested in your opinions on these questions. Please circle "yes" or "no" for each question below.

1.	Do you believe that most problems will solve themselves if you just don't fool with them?	YES	NO
2.	Do you believe that you can stop yourself from catching a cold?	YES	NO
3.	Are some people just born lucky?	YES	NO
4.	Most of the time do you feel that getting good grades meant a great deal to you?	YES	NO
5.	Are you often blamed for things that just aren't your fault?	YES	NO
6.	Do you believe that if somebody studies hard enough he or she can pass any subject?	YES	NO
7.	Do you feel that most of the time it doesn't pay to try hard because things never turn out right anyway?	YES	NO
8.	Do you feel that if things start out well in the morning that it's going to be a good day no matter what you do?	YES	NO
9.	Do you feel that most of the time parents listen to what their children have to say?	YES	NO
10.	Do you believe that wishing can make good things happen?	YES	NO
11.	When you get punished does it usually seem it's for no good reason at all?	YES	NO
12.	Most of the time do you find it hard to change a friend's (mind) opinion?	YES	NO
13.	Do you think that cheering more than luck helps a team to win?	YES	NO
14.	Did you feel that it was nearly impossible to change your parent's mind about anything?	YES	NO
15.	Do you believe that parents should allow children to make most of their own decisions?	YES	NO

16.	Do you feel that when you do something wrong there's very little you can do to make it right?	YES	NO
17.	Do you believe that most people are just born good at sports?	YES	NO
18.	Are most of the other people your age stronger than you are?	YES	NO
19.	Do you feel that one of the best ways to handle most problems is just not to think about them?	YES	NO
20.	Do you feel that you have a lot of choice in deciding who your friends are?	YES	NO
21.	If you find a four leaf clover, do you believe that it might bring you good luck?	YES	NO
22.	Did you often feel that whether or not you did your homework had much to do with what kind of grades you got?	YES	NO
23.	Do you feel that when a person your age is angry at you, there's little you can do to stop him or her?	YES	NO
24.	Have you ever had a good luck charm?	YES	NO
25.	Do you believe that whether or not people like you depends on how you act?	YES	NO
26.	Did your parents usually help you if you asked them to?	YES	NO
27.	Have you felt that when people were angry with you it was usually for no reason at all?	YES	NO
28.	Most of the time, do you feel that you can change what might happen tomorrow by what you do today?	YES	NO
29.	Do you believe that when bad things are going to happen they just are going to happen no matter what you try to do to stop them?	YES	NO
30.	Do you think that people can get their own way if they just keep trying?	YES	NO
31.	Most of the time do you find it useless to try to get your own way at home?	YES	NO
32.	Do you feel that when good things happen they happen because of hard work?	YES	NO
33.	Do you feel that when somebody your age wants to be your enemy there's little you can do to change matters?	YES	NO
34.	Do you feel that it's easy to get friends to do what you want them to do?	YES	NO

35. Do you usually feel that you have little to say about what you get to eat at home? YES NO

36. Do you feel that when someone doesn't like you there's little you can do about it? YES NO

37. Did you usually feel that it was almost useless to try in school because most other children were just plain smarter than you are? YES NO

38. Are you the kind of person who believes that planning ahead makes things turn out better? YES NO

39. Most of the time, do you feel that you have little to say about what your family decides to do? YES NO

40. Do you think it's better to be smart than to be lucky? YES NO

APPENDIX B-4

STAGES OF CONCERN (SoC) QUESTIONNAIRE

CONCERNS QUESTIONNAIRE

Name _____

Code Number _____ (It is very important for continuity in processing this data that we have a unique number that you can remember. Please use the last four digits of your social security number).

The purpose of this questionnaire is to determine what people who are using or thinking about using innovations are concerned about at various times during the innovation adoption process. The items were developed from typical responses of school and college teachers who ranged from no knowledge at all about various innovations to many years experience in using them. Therefore, a good part of the items may appear to be of little relevance or irrelevant to you at this time. For the completely irrelevant items, please circle "0" on the scale. Other items will represent those concerns you do have, in varying degrees of intensity, and should be marked higher on the scale, according to the explanation at the top of each of the following pages.

For Example:

0 1 2 3 4 5 6 (7) This statement is very true of me at this time.

0 1 2 3 (4) 5 6 7 This statement is somewhat true of me now.

0 (1) 2 3 4 5 6 7 This statement is not at all true of me at this time.

(0) 1 2 3 4 5 6 7 This statement seems irrelevant to me.

Please respond to the items in terms of your present concerns, or how you feel about your involvement or potential involvement with the innovation of Individualized Instruction. We do not hold to any one definition of this innovation, so please think of it in terms of your own perceptions of what it involves. Please note that the name Individualized Instruction never appears in this questionnaire. Phrases such as "the innovation," "this approach," and "the new system" all refer to the use of Individualized Instruction. Remember to respond to each item in terms of your present concerns about your involvement or potential involvement with Individualized Instruction.

Thank you for taking time to complete this task.

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R&D Center for Teacher Education, The University of Texas at Austin

0 1 2 3 4 5 6 7
Not true of me now — Somewhat true of me now — Very true of me now

0 1 2 3 4 5 6 7	I am concerned about students' attitudes toward this innovation.
0 1 2 3 4 5 6 7	I now know of some other approaches that might work better.
0 1 2 3 4 5 6 7	I don't even know what the innovation is.
0 1 2 3 4 5 6 7	I am concerned about not having enough time to organize myself each day.
0 1 2 3 4 5 6 7	I would like to help other faculty in their use of the innovation.
0 1 2 3 4 5 6 7	I have a very limited knowledge about the innovation.
0 1 2 3 4 5 6 7	I would like to know the effect of reorganization on my professional status.
0 1 2 3 4 5 6 7	I am concerned about conflict between my interests and my responsibilities.
0 1 2 3 4 5 6 7	I am concerned about revising my use of the innovation.
0 1 2 3 4 5 6 7	I would like to develop working relationships with both our faculty and outside faculty using this innovation.
0 1 2 3 4 5 6 7	I am concerned about how the innovation affects students.
0 1 2 3 4 5 6 7	I am not concerned about this innovation.
0 1 2 3 4 5 6 7	I would like to know who will make the decisions in the new system.
0 1 2 3 4 5 6 7	I would like to discuss the possibility of using the innovation.
0 1 2 3 4 5 6 7	I would like to know what resources are available if we decide to adopt this innovation.
0 1 2 3 4 5 6 7	I am concerned about my inability to manage all the innovation requires.
0 1 2 3 4 5 6 7	I would like to know how my teaching or administration is supposed to change.
0 1 2 3 4 5 6 7	I would like to familiarize other departments or persons with the progress of this new approach.

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0 1 2 3 4 5 6 7	
Not true of me now	Somewhat true of me now / Very true of me now
0 1 2 3 4 5 6 7	I am concerned about evaluating my impact on students.
0 1 2 3 4 5 6 7	I would like to revise the innovation's instructional approach.
0 1 2 3 4 5 6 7	I am completely occupied with other things.
0 1 2 3 4 5 6 7	I would like to modify our use of the innovation based on the experiences of our students.
0 1 2 3 4 5 6 7	Although I don't know about this innovation, I am concerned about things in the area.
0 1 2 3 4 5 6 7	I would like to excite my students about their part in this approach.
0 1 2 3 4 5 6 7	I am concerned about time spent working with nonacademic problems related to this innovation.
0 1 2 3 4 5 6 7	I would like to know what the use of the innovation will require in the immediate future.
0 1 2 3 4 5 6 7	I would like to coordinate my effort with others to maximize the innovation's effects.
0 1 2 3 4 5 6 7	I would like to have more information on time and energy commitments required by this innovation.
0 1 2 3 4 5 6 7	I would like to know what other faculty are doing in this area.
0 1 2 3 4 5 6 7	At this time, I am not interested in learning about this innovation.
0 1 2 3 4 5 6 7	I would like to determine how to supplement, enhance, or replace the innovation.
0 1 2 3 4 5 6 7	I would like to use feedback from students to change the program.
0 1 2 3 4 5 6 7	I would like to know how my role will change when I am using the innovation.
0 1 2 3 4 5 6 7	Coordination of tasks and people is taking too much of my time.
0 1 2 3 4 5 6 7	I would like to know how this innovation is better than what we have now.

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APPENDIX B-5

CHARACTERISTICS OF THE INNOVATION QUESTIONNAIRE (CIQ)

Name _____

Code _____

CHARACTERISTICS OF THE INNOVATION

DIRECTIONS: Because you work in the community college setting we are very interested in your opinions and judgments about individualized instruction. Please respond to the following questions by circling the number which most closely represents your feelings.

How much more or less useful do you think individualized instruction is (or would be) compared to other instructional methods you have used (or are using) at your college?

1 2 3 4 5 6 7 8 9 10

Much Less Useful — Much More Useful

How compatible is individualized instruction with your own personal values, beliefs, attitudes, and past experiences?

1 2 3 4 5 6 7 8 9 10

Not at all Compatible — Very Highly Compatible

To what extent do you see individualized instruction as being a difficult method to understand and use?

1 2 3 4 5 6 7 8 9 10

Very Difficult To Understand And Use — Not At All Difficult to Understand and Use

How possible do you think it would be to install individualized instruction within your program area on a limited basis in order to test the usefulness and value of this method? More specifically, if adopted, to what degree do you think individualized instruction lends itself to trial use for a limited time and on a limited basis as opposed to requiring the participation of all for an extended period of time? Please rate both on the following scales.

1 2 3 4 5 6 7 8 9 10

Lends Itself to Limited Trial (One Semester) — Requires Extended Trial (3 Years Or More)

1 2 3 4 5 6 7 8 9 10

Lends Itself to Demonstration Trial By One Instructor in The Program Area — Requires Demonstrati Trial by All Instructors in the Program Area

To what extent do you think the effects or outcomes which result from the use of individualized instruction are (or would be) visible and apparent to others in your program area not using this instructional method?

1 2 3 4 5 6 7 8 9 10

Not at All Visible And Apparent — Very Highly Visible And Apparent

APPENDIX B-6

ORGANIZATIONAL GROWTH STAGES QUESTIONNAIRE (OGS)

Code Number _____

ORGANIZATIONAL GROWTH STAGES

The following questions ask you to provide your "best hunch" with respect to selected organizational phenomena. In answering, please evaluate your college by choosing the response which most closely represents your feelings.

Instructions:

The format given on the following page allows you to rate each of the following statements in terms of its importance or applicability to your college, and it allows you to rank each statement relative to the remaining statements. First read each statement and rate it by placing an X in one of the four columns (e.g., VERY CHARACTERISTIC, SOMEWHAT CHARACTERISTIC, MILDLY CHARACTERISTIC, NOT AT ALL CHARACTERISTIC). After all statements have been rated, go back to each column separately and where there is more than one X in a column you are to rank order the X's. For example, if three statements received an X in the VERY CHARACTERISTIC column you would reread each statement and assign a 1 to the one of the three that is more characteristic than the other two statements, a 2 to the next most characteristic, and a 3 to the next. See the example on the following page.

Statements

Use rating/ranking format for this question only.

1. **How characteristic are the following statements in relation to your college?**

   A. **We are concerned about survival as a viable organization (concerned about what to do now and what can be deferred until later.)**

   B. **We are trying to gain stability (concerned about organization, rules, regulations, etc.)**

   C. **We desire to gain a reputation (need to develop pride; willingness to engage in self-study.)**

   D. **We desire to achieve uniqueness (concerned with what and how to change.)**

   E. **We wish to contribute to society (desire to contribute to the community or nation without expecting a direct return.)**

Statements	VERY Characteristic	SOMEWHAT Characteristic	MILDLY Characteristic	NOT AT ALL Characteristic
A				
B				
C				
D				
E				

Example:

Statements	VERY Characteristic	SOMEWHAT Characteristic	MILDLY Characteristic	NOT AT ALL Characteristic
A	X 2			
B		X		
C	X 1			
D			X 2	
E			X 1	

Instructions:

2. Below you will find the profiles of five hypothethical community colleges. The profiles are set in terms of pressing questions. Read the profiles carefully and then select the profile that is most characteristic of your college. As you read each of the questions within each profile place an X after the questions that are being asked at your college. This procedure should help you identify the profile that is closest to your institutional profile; that is, it should be the one to which you have assigned the most X's.

College A:

Are there enough new students each semester replacing those who transfer, drop out or complete their course of study to warrant the continuance of all essential college services? (1) ____
Is there barely enough building space for essential college functions or for survival of the college? (2) ____
Are there sufficient courses offered to provide for academic and vocational/technical specialities (majors or programs)? (3) ____
Does the college maintain its core staff; Is there a commitment to the college's survival? (4) ____
Do less than 40 per cent of the students who enroll at the college fulfill their intentions to complete a degree of certificate and/or transfer to a senior college? (5) ____
Is only information required by law shared with faculty, staff, students, and citizens? (6) ____

College B:

Are there enough returning and new students each semester to warrant some programs which are not considered essential to the existence of the college? (1) ____
Are cost accounting and financial planning performed on a predictable and continuing basis with stable resources; Is there adequate building space for all college functions? (2) ____
Is there sufficient stability in the educational program to insure the transferability of courses to senior colleges; Are vocational/technical programs continuing to produce graduates possessing skills required by the community? (3) ____
Do personnel feel secure and satisfied with their positions; Is there enough professional specialization to fulfill necessary career aspirations? (4) ____
Do 40 to 50 per cent of the students who enroll at the college fulfill their intentions to complete a degree or certificate and/or transfer to a senior college? (5) ____
Is information available to faculty, staff, students, and citizens on a need-to-know basis; Are responses to requests for information a matter of routine? (6) ____

College C:

Do students often attend the college because of the reputation of the college and/or a particular program of study offered by the college? (1) ____
Has the college developed a reputation which invites public trust in its financial and fiscal affairs? (2) ____
Does the college have a reputation of quality--are graduates readily accepted by industry and universities? (3) ____
Have personnel developed a sense of pride in and identity with the college; (Do applications exceed positions available; Is there a wide geographical range of applicants?) (4) ____
Do 50 to 70 per cent of the students who enroll at the college fulfill their intentions to complete a degree or certificate and/or transfer to a senior college? (5) ____
Is the college seen as a leader in community affairs? (6) ____

College D:

Do students who could go elsewhere, and/or students who would not normally go to college at all come to the college because of its uniqueness? (1) ____
Are resources available to support self-studies designed to maximize the college's uniqueness and to explore possible changes in organizational direction? (2) ____
Are graduates of transfer and vocational/technical programs sought after by universities and industry; Does the educational program frequently engage in renewal and revitalization efforts through self-study and improvement? (3) ____
Has the college developed a unique and relevant in-service staff development or enrichment program? (4) ____
Do 70 to 80 per cent of the students who enroll at the college fulfill their intentions to complete a degree or certificate and/or transfer to a senior college? (5) ____
Is the college seen as a model institution in the community or the nation; Is the college nationally known for its unique qualities? (6) ____

College E:

Is there an active outreach effort made by the college to coordinate services and share resources with other local educational or services institutions? (1) ____
Are wide range of financial aid programs available; Are facilities used for general community need and welfare: Is an active program of community consultation being conducted? (2) ____
Are instructional methods developed at your college contributing to breakthroughs in instructional design; Has the college been asked to design programs for other schools, industry and/or community service groups? (3) ____
In addition to in-service staff development and enrichment programs, does the college provide opportunities for personnel to grow personally and professionally beyond job requirements; Are professional contributions to the community common occurrences? (4) ____

College E: (con't.)

Do more than 80 per cent of the students who enroll at the college fulfill their intentions to complete a degree or certificate and/or transfer to a senior college? (5) ____

Is the college making a clearly identifiable contribution to the community college movement and the larger society? (6) ____

* * * * * * *

The profile of College A B C D E (circle one) is most similar to my college.

3. Select an innovation with which you are familiar which is being attempted at your college, e.g., individualized instruction. Name it in the following space: _____.
Which one of the following statements best describes the progress of the college's staff with respect to your chosen innovation?

_____ A. The staff is acquiring information about the innovation and is weighing the demands of the innovation upon the user and user-system.

_____ B. The staff is preparing for the first use of the innovation.

_____ C. The staff is using the innovation in a "by the numbers" step-by-step or mechanical fashion.

_____ D. The staff routinely uses the innovation making few if any changes.

_____ E. The staff has evaluated the impact of the innovation upon the students and is making changes based on knowledge of both short and long-term consequences for students.

4. Please check any of the following problems which are characteristic of your college:

_____ A. The organizational style is overly reactive, crisis-dominated.

_____ B. Attitudes and policies are overly reactive, crisis-dominated.

_____ C. Recruitment of quality personnel is a major difficulty.

_____ D. Inappropriate, overly agressive, and distorted image-building is commonplace and characteristic of the college.

_____ E. Energy which could be productively targeted is diffuse; unnecessarily defensive or competitive attitudes proliferate.

_____ F. The most creative and talented personnel leave this college to go elsewhere.

_____ G. The college is in jeopardy of losing the public's respect and appreciation.

_____ H. The college is facing critical budget shortages as a result of student attrition.

_____ I. Other (Please specify one problem which is characteristic of your college.)

_____

APPENDIX B-7

SURVEY OF COMMUNITY COLLEGE ORGANIZATIONAL FUNCTIONING (SOCCOF)

Code Number

SURVEY OF COMMUNITY COLLEGE ORGANIZATIONAL FUNCTIONING

This questionnaire is part of a study designed in conjunction with your college to learn more about how people work together. The aim is to use the information to make your work situation more satisfying and productive.

If this study is to be helpful, it is important that you answer each question as thoughtfully and frankly as possible. This is not a test and there are no right or wrong answers.

The questionnaires will be processed so that only group results will be reported. No individual responses will be identified.

. . . . . .

Adapted from the Survey of Organizations. Institute for Social Research, Ann Arbor, Michigan. By: Jerry Snow & Oscar G. Mink, NOVA Research Project, The University of Texas at Austin, 1977.

INSTRUCTIONS

Most questions can be answered by circling one of the answer spaces. If you do not find the exact answer that fits your case, use the one that is closest to it.

Please answer all questions in order.

Remember, the value of the study depends upon your being straightforward in answering this questionnaire. You will not be identified with your answers.

This questionnaire is designed for easy completion and key punching. Questions are answered by circling the appropriate answer spaces as illustrated in this example:

Q. Which is the only mark that will be read properly?

1 = An "X" over the number
2 = A ✓ next to the number
3 = A ○ around the number
4 = Other

Definitions: This questionnaire asks about a lot of different aspects of your work. Among these are questions about your supervisor and your department. The questions about your supervisor refer to the person to whom you report directly and the questions about your department refer to all those persons who report to the same supervisor.

1. What is the name of your college? _____

2. In which Division do you work? (e.g. voc/tech, academic, student services)

_____

3. In which department or program do you work (e.g. welding, history, counseling)

_____

NOTE: Read these answer categories over carefully. Then answer each of the following questions by circling the number of the answer you want to give.

1 = To a very little extent
2 = To a little extent
3 = To some extent
4 = To a great extent
5 = To a very great extent

4.	To what extent is this college generally quick to try out new instructional methods?	1	2	3	4	5
5.	To what extent <u>is</u> this college using individualized or the systems approach to instruction?	1	2	3	4	5
6.	To what extent would you <u>like</u> this college to be using individualized or the systems approach to instruction?	1	2	3	4	5
7.	To what extent does this college have a real interest in the welfare and happiness of those who work here?	1	2	3	4	5
8.	How much does this college try to improve working conditions?	1	2	3	4	5
9.	To what extent does this college have clear-cut, reasonable goals and objectives?	1	2	3	4	5
10.	To what extent are work activities sensibly organized in this college?	1	2	3	4	5
11.	How adequate for your department is the information it gets about what is going on in other departments?	1	2	3	4	5
12.	To what extent does this college tell your department what it needs to know to do its job in the best possible way?	1	2	3	4	5

13. How are differences and disagreements between units or departments handled in this college?

    1. Disagreements are most always avoided, denied, or suppressed.

    2. Disagreements are often avoided, denied, or suppressed.

    3. Sometimes disagreements are accepted and worked through, sometimes they are avoided or suppressed.

    4. Disagreements are usually accepted as necessary and desirable and are worked through.

    5. Disagreements are almost always accepted as necessary and desirable and are worked through.

NOTE: Read these answer categories over carefully. Then answer each of the following questions by circling the number of the answer you want to give.

1 = Very dissatisfied
2 = Somewhat dissatisfied
3 = Neither satisfied nor dissatisfied
4 = Fairly satisfied
5 = Very satisfied

14.	All in all, how satisfied are you with the persons in your department?	1	2	3	4	5
15.	All in all, how satisfied are you with your supervisor?	1	2	3	4	5
16.	All in all, how satisfied are you with your job?	1	2	3	4	5
17.	All in all, how satisfied are you with this college?	1	2	3	4	5
18.	Considering your skills and the effort you put into the work, how satisfied are you with your pay?	1	2	3	4	5
19.	How satisfied do you feel with the progress you have made in this college up to now?	1	2	3	4	5
20.	How satisfied do you feel with your chances for getting ahead in this college in the future?	1	2	3	4	5

21. Why do people work hard in this college?

1. Just to keep their positions and avoid being chewed out.
2. To keep their positions <u>and</u> to make money.
3. To keep their positions, make money, <u>and</u> to seek promotions.
4. To keep their positions, make money, seek promotions, <u>and</u> for the satisfaction of a job well done.
5. To keep their positions, make money, seek promotions, do a satisfying job, <u>and</u> because other people in their department expect it.
6. All of the above, <u>and</u> because the students expect it.

NOTE: Read these answer categories over carefully. Then answer each of the following questions by circling the number of the answer you want to give.

1 = To a very little extent
2 = To a little extent
3 = To some extent
4 = To a great extent
5 = To a very great extent

22.	To what extent do you enjoy performing the actual day-to-day activities that make up your job?	1	2	3	4	5
23.	To what extent are there things about working here (people, policies, or conditions) that encourage you to work hard?	1	2	3	4	5

NOTE: Read these answer categories over carefully. Then answer each of the following questions by circling the number of the answer you want to give.

1 = Little or no influence
2 = Some
3 = Quite a bit
4 = A great deal
5 = A very great deal of influence

IN GENERAL, HOW MUCH SAY OR INFLUENCE DOES EACH OF THE FOLLOWING GROUPS OF PEOPLE HAVE ON WHAT GOES ON IN YOUR DEPARTMENT?

24.	In general, how much say or influence do you have on what goes on in your department?	1	2	3	4	5
25.	Lowest-level supervisors (department chairpersons, supervisors, etc.)?	1	2	3	4	5
26.	Top administration (president, vice presidents, deans of large divisions, etc.)?	1	2	3	4	5
27.	Students?	1	2	3	4	5
28.	Middle administration (division heads, area managers, associate deans, etc.)?	1	2	3	4	5
29.	Staff and faculty (professionals who have no subordinates)?	1	2	3	4	5
30.	Board of Trustees?	1	2	3	4	5
31.	Advisory Boards (representatives from business and industry to your department)?	1	2	3	4	5
32.	Faculty Senate or equivalent?	1	2	3	4	5

33. How are objectives set in this college?

1. Objectives are announced with no opportunity to raise questions or give comments.

2. Objectives are announced and explained, and an opportunity is then given to ask questions.

3. Objectives are drawn up, but are discussed with subordinates and sometimes modified before being issued.

4. Specific alternative objectives are drawn up by supervisors and subordinates are asked to discuss them and indicate the one they think is best.

5. Problems are presented to those persons who are involved, and the objectives felt to be best are then set by the subordinates and the supervisor jointly, by group participation and discussion.

NOTE: Read these answer categories over carefully. Then answer each of the following questions by circling the number of the answer you want to give.

1 = To a very little extent
2 = To a little extent
3 = To some extent
4 = To a great extent
5 = To a very great extent

34.	In this college to what extent are decisions made at those levels where the most adequate and accurate information is available?	1	2	3	4	5
35.	When decisions are being made, to what extent are the persons affected asked for their ideas?	1	2	3	4	5
36.	When decisions are being made, to what extent would you like the persons affected to be asked for their ideas?	1	2	3	4	5
37.	People at all levels of a college usually have know-how that could be of use to decision makers. To what extent is information widely shared in this college so that those who make decisions have access to all available know-how?	1	2	3	4	5
38.	To what extent do different units or departments plan together and coordinate their efforts?	1	2	3	4	5
39.	To what extent would you like different units or departments to plan together and coordinate their efforts?	1	2	3	4	5

PERCEPTIONS OF SUPERVISION:

Please answer questions 40-65 by referring to the person who serves as your supervisor. Supervisor means the person to whom you report directly. For the following set of items, please read each question and with your supervisor in mind answer HOW IT IS NOW, and HOW YOU'D LIKE IT TO BE using the extent scale above.

How friendly and easy to approach is your supervisor?

40.	This is how it is now:	1	2	3	4	5
41.	This is how I'd like it to be:	1	2	3	4	5

1 = To a very little extent
2 = To a little extent
3 = To some extent
4 = To a great extent
5 = To a very great extent

When you talk with your supervisor, to what extent does he pay attention to what you're saying?

42. This is how it is now: 1 2 3 4 5
43. This is how I'd like it to be: 1 2 3 4 5

To what extent is your supervisor willing to listen to your problems?

44. This is how it is now: 1 2 3 4 5
45. This is how I'd like it to be: 1 2 3 4 5

How much does your supervisor encourage people to give their best effort?

46. This is how it is now: 1 2 3 4 5
47. This is how I'd like it to be: 1 2 3 4 5

To what extent does your supervisor maintain high standards of performance?

48. This is how it is now: 1 2 3 4 5
49. This is how I'd like it to be: 1 2 3 4 5

To what extent does your supervisor show you how to improve your performance?

50. This is how it is now: 1 2 3 4 5
51. This is how I'd like it to be: 1 2 3 4 5

To what extent does your supervisor provide the help you need so that you can schedule what needs to be done ahead of time?

52. This is how it is now: 1 2 3 4 5
53. This is how I'd like it to be: 1 2 3 4 5

To what extent does your supervisor offer new ideas for solving job-related problems?

54. This is how it is now: 1 2 3 4 5
55. This is how I'd like it to be: 1 2 3 4 5

To what extent does your supervisor encourage the persons in your department to work as a team?

56. This is how it is now: 1 2 3 4 5
57. This is how I'd like it to be: 1 2 3 4 5

To what extent does your supervisor encourage people in your department to exchange opinions and ideas?

58. This is how it is now: 1 2 3 4 5
59. This is how I'd like it to be: 1 2 3 4 5

1 = To a very little extent
2 = To a little extent
3 = To some extent
4 = To a great extent
5 = To a very great extent

To what extent does your supervisor encourage people in your department to exchange ideas and opinions with other departments or units in the college?

60.	This is how it is now:	1	2	3	4	5
61.	This is how I'd like it to be:	1	2	3	4	5

To what extent does your supervisor encourage you to work as a team with members of other departments in assisting students?

62.	This is how it is now:	1	2	3	4	5
63.	This is how I'd like it to be:	1	2	3	4	5
64.	To what extent do you feel your supervisor has confidence and trust in you?	1	2	3	4	5
65.	To what extent do you have confidence and trust in your supervisor?	1	2	3	4	5
66.	To what extent does your supervisor handle well the technical side of his job--for example, general expertness, knowledge of job, technical skills needed, etc.?	1	2	3	4	5
67.	To what extent does your supervisor do a good job of representing your department to other departments? ("Represent" means telling others about what your department has done and can do, as well as explaining the problems facing it and its readiness to do things.)	1	2	3	4	5

IN ORDER TO BE AN EFFECTIVE LEADER, A SUPERVISOR NEEDS CERTAIN KINDS OF INFORMATION, SKILLS, VALUES AND SITUATIONS. TO WHAT EXTENT DOES YOUR SUPERVISOR HAVE EACH OF THE FOLLOWING:

68.	Information about how his people see and feel about things?	1	2	3	4	5
69.	Knowledge of what it takes to be a good leader?	1	2	3	4	5
70.	An attitude which encourages participation and commitment from those who work for him?	1	2	3	4	5
71.	Administrative skill?	1	2	3	4	5
72.	Skills for getting along with others?	1	2	3	4	5
73.	A work situation which allows him to be a good leader?	1	2	3	4	5
74.	Interest in and concern for the people who work for/with him or her?	1	2	3	4	5

1 = To a very little extent
2 = To a little extent
3 = To some extent
4 = To a great extent
5 = To a very great extent

WHEN IT IS NECESSARY FOR DECISIONS TO BE MADE THAT AFFECT YOUR DEPARTMENT, TO WHAT EXTENT DOES YOUR SUPERVISOR DO EACH OF THE FOLLOWING BEFORE FINAL DECISIONS ARE MADE?

Provide the members of your department with information about the decisions?

75. This is how it is now: 1 2 3 4 5
76. This is how I'd like it to be: 1 2 3 4 5

Ask for opinions and ideas from members of your department?

77. This is how it is now: 1 2 3 4 5
78. This is how I'd like it to be: 1 2 3 4 5

Meet with his subordinates as a group, present problems that must be solved and work with the group to find solutions?

79. This is how it is now: 1 2 3 4 5
80. This is how I'd like it to be: 1 2 3 4 5

IN ALL THE QUESTIONS BELOW, DEPARTMENT MEANS ALL THOSE PERSONS WHO REPORT TO THE SAME SUPERVISOR.

85. How friendly and easy to approach are the persons in your department? 1 2 3 4 5

86. When you talk with persons in your department, to what extent do they pay attention to what you are saying? 1 2 3 4 5

To what extent are persons in your department willing to listen to your problems?

87. This is how it is now: 1 2 3 4 5
88. This is how I'd like it to be: 1 2 3 4 5

How much do persons in your department encourage each other to give their best effort?

89. This is how it is now: 1 2 3 4 5
90. This is how I'd like it to be: 1 2 3 4 5

To what extent do persons in your department maintain high standards of performance?

91. This is how it is now: 1 2 3 4 5
92. This is how I'd like it to be: 1 2 3 4 5

To what extent do persons in your department help you find ways to do a better job?

93. This is how it is now: 1 2 3 4 5
94. This is how I'd like it to be: 1 2 3 4 5

1 = To a very little extent
2 = To a little extent
3 = To some extent
4 = To a great extent
5 = To a very great extent

To what extent do persons in your department provide the help you need so that you can plan, organize, and schedule what you need to do ahead of time?

95.	This is how it is now:	1	2	3	4	5
96.	This is how I'd like it to be:	1	2	3	4	5

To what extent do persons in your department offer each other new ideas for solving job-related problems?

97.	This is how it is now:	1	2	3	4	5
98.	This is how I'd like it to be:	1	2	3	4	5

How much do persons in your department encourage each other to work as a team?

99.	This is how it is now:	1	2	3	4	5
100.	This is how I'd like it to be:	1	2	3	4	5

How much do persons in your department enphasize a team goal?

101.	This is how it is now:	1	2	3	4	5
102.	This is how I'd like it to be:	1	2	3	4	5

To what extent do persons in your department exchange opinions and ideas?

103.	This is how it is now:	1	2	3	4	5
104.	This is how I'd like it to be:	1	2	3	4	5
105.	To what extent does your department plan together and coordinate its efforts.	1	2	3	4	5
106.	To what extent does your department make good decisions and solve problems well?	1	2	3	4	5
107.	To what extent do persons in your department know what their jobs are and know how to do them well?	1	2	3	4	5
108.	To what extent is information about important events and situations shared within your department?	1	2	3	4	5
109.	To what extent is your department able to respond to unusual demands placed upon it?	1	2	3	4	5
110.	To what extent do you have confidence and trust in the persons in your department?	1	2	3	4	5
111.	To what extent does your department really want to meet its objectives successfully?	1	2	3	4	5
112.	To what extent are the equipment and resources you have to do your work with adequate, efficient, and well maintained?	1	2	3	4	5

1 = To a very little extent
2 = To a little extent
3 = To some extent
4 = To a great extent
5 = To a very great extent

113.	*When it comes to doing your job well, to what extent* does trying hard make any difference?	1	2	3	4	5
114.	To what extent does doing your job well lead to things like pay increases, bonuses, and promotions?	1	2	3	4	5
115.	To what extent does doing you job well give you a feeling of personal satisfaction?	1	2	3	4	5
116.	To what extent does doing your job well lead to things like recognition and respect from those you work with?	1	2	3	4	5
117.	To what extent does doing your job well lead to things like disapproval and rejection from those you work with?	1	2	3	4	5
118.	To what extent are you clear about what people expect you to do on your job?	1	2	3	4	5
119.	To what extent are there times on your job when one person wants you to do one thing and someone else wants you to do something different?	1	2	3	4	5
120.	To what extent do people expect too much from you?	1	2	3	4	5

TO WHAT EXTENT DOES EACH OF THE FOLLOWING STATEMENTS DESCRIBE THE JOB YOU HAVE NOW?

121.	It gives me the opportunity to find out how well I am doing.	1	2	3	4	5
122.	It lets me do a number of different things.	1	2	3	4	5
123.	It gives me the freedom to do pretty much what I want.	1	2	3	4	5
124.	I can learn new things, learn new skills.	1	2	3	4	5
125.	It provides good chances for getting ahead.	1	2	3	4	5
126.	It uses my skills and abilities--lets me do what I can do best.	1	2	3	4	5
127.	I get endlessly referred from person to person when I need help.	1	2	3	4	5
128.	I have to go through a lot of "red tape" to get things done.	1	2	3	4	5
129.	I get hemmed in by longstanding rules and regulations that no one seems to be able to explain.	1	2	3	4	5

1 = To a very little extent
2 = To a little extent
3 = To some extent
4 = To a great extent
5 = To a very great extent

IN THINKING ABOUT THE KIND OF JOB YOU WOULD LIKE TO HAVE (WHETHER OR NOT YOU HAVE IT NOW), TO WHAT EXTENT IS EACH OF THE FOLLOWING IMPORTANT TO YOU?

130. A job where I can learn new things, learn new skills. 1 2 3 4 5

131. A job with good chances for getting ahead. 1 2 3 4 5

132. A job that uses my skills and abilities -- lets me do what I can do best. 1 2 3 4 5

133. A job that gives me the opportunity to find out how well I am doing. 1 2 3 4 5

134. A job that gives me the freedom to do pretty much what I want. 1 2 3 4 5

* * * * *

135. To what extent is the college you work for effective in getting you to meet its needs and contribute to its effectiveness? 1 2 3 4 5

136. To what extent does the college you work for do a good job of meeting your needs as an individual? 1 2 3 4 5

137. Your sex: 1. Male 2. Female

138. When did you first come to work here?

1. Less than 1 year ago
2. Between 1 and 5 years ago
3. Between 5 and 10 years ago
4. Between 10 and 15 years ago
5. Between 15 and 25 years ago
6. More than 25 years ago

139. Into what age bracket do you fall?

1. 25 years or under
2. 26 years to 30 years
3. 31 years to 35 years
4. 36 years to 40 years
5. 41 years to 45 years
6. 46 years to 55 years
7. 56 years or older

140. How much schooling have you had?

1. Completed high school
2. Some college
3. B.A., B.S.
4. B.A., B.S., plus
5. M.A., M.S.
6. M.A., M.S., plus
7. Ph.D., Ed.D., LL.D.

141. While you were growing up -- say until you were eighteen -- what kind of community did you live in for the most part?

1. Rural area or farm
2. Town or small city
3. Suburban area near large city
4. Large city

142. What position do you presently hold at your college?

1. Faculty
2. Administrative/faculty
3. Administrative
4. Staff (professional serving in a non-supervisory position)
5. Classified (secretarial or clerical)
6. Paraprofessional (serving in a professional capacity without the usual preparation)

143. Is your position:

1. Full time
2. Part time

144. Would you want a member of the project staff to provide a group feedback session to your work group?

1. Yes
2. No

APPENDIX B-8

THE OBJECTIVE INSTITUTIONAL CHARACTERISTICS QUESTIONNAIRE (OIC)

_____

College

_____

Respondent

_____

Date

Objective Characteristics of Community Colleges Questionnaire

Directions: We are very eager to have data regarding certain specific "Objective characteristics" of your campus. Most of these data we hope and expect are already available at one or another office on your campus (e.g., registrar's office, business manager's office, etc.). These same questions are frequently asked for by governmental agencies such as TEA, the Coordinating Board, HEW and others. Therefore, this should require only limited additional effort on your part. Please relate all data to a baseline of September, 1976. Please feel free to contact the project if you have any difficulties or questions about any part of this questionnaire.

FACTOR 1

A. Size of endowment _____
(Estimated market value as of September, 1976. If no endowment, indicate 0.)

B. Size of operating budget _____
(Annual expenditure for educational & general purposes, including faculty salaries, administrative expenses, etc.)

C. Faculty/student ratio _____ to _____

D. Mean aptitude level of entering students: (Complete at least one of the following.)

SAT Verbal _____ SAT Quantitative _____ Total SAT _____

or

ACT English _____ ACT Math _____ ACT Social Studies _____

ACT Natural Sciences _____ ACT Composite _____

_____ No data available.

E. Total instate tuition and other required fees per academic year _____

F. Percentage of faculty holding doctorate degree _____

G. Percentage of faculty holding masters degree _____

H. Percentage of faculty holding bachelors degree _____

I. Percentage of faculty holding less than a bachelors degree _____

FACTOR 2

A. Relative library size (total number of volumes per total enrollment)

_____ to _____
Volumes (Print) Enrollment

B. Relative learning resources center size (total number of casette tapes, film strips, etc., per total enrollment.)

_____ to _____
Non-print units Enrollment

C. Total student enrollment _____

Number of students in academic curriculum _____
Number of students in vocational/technical curriculum _____
Number of students in Developmental Studies Program _____

D. Curriculum variety _____ (Total number of different major fields or programs offered, for which a degree or certificate might be obtained.)

E. Percentage of total budget allocated to academic program _____

F Percentage of total budget allocated to vocational/technical program _____

FACTOR 3

A. Growth rate _____% (Percentage increase in total enrollment between September, 1971, and September, 1976.)

B. Number of students successfully completing their program in 1976:

Associate degree _____
Certificate of Graduation _____
Other (1-year, vocational) _____

FACTOR 4

A. Percentage of males in the student body _____%

B. Percentage of out-of-state students _____%

C Technological emphasis _____ to _____
(Number of vocational/technical majors relative to total number of majors offered.)

FACTOR 5

A. Realistic orientation _____%
(For this and other orientations, see Table below. Percentage of majors in realistic categories.)

B. Intellectual orientation _____%
(Percentage of majors in intellectual categories.)

C. Social orientation _____%
(Percentage of majors in social categories.)

D. Conventional orientation _____%
(Percentage of majors in conventional categories.)

E. Enterprising orientation _____%
(Percentage of majors in enterprising categories.)

F. Artistic orientation _____%
(Percentage of majors in artistic categories.)

G. Homogeneity of the environment _____%
(The difference between the highest and lowest percentages of personal orientations at the college, e.g., if there were a 62% Realistic Orientation and a 12% Artistic Orientation representing the highest and lowest percentages, then the homogeneity would be 50%.)

H. Percentage of black students _____%
Percentage of Mexican-American students _____%
Percentage of Anglo students _____%
Percentage of students 22 years of age or older _____%
Percentage of Indian students _____%
Percentage of Oriental students _____%

FACTOR 6

A. Estimated percentage of students out of those graduating in 1976 who transferred to four-year institutions _____%
(Based on proportion of students receiving A.A. degree Spring Term, 1976.)

B. Estimated percentage of students enrolled having permanent residence outside the College's designated service area _____%

FACTOR 7

A. Percentage of students who seek counseling per annum _____%

B. Withdrawal rate within:

Academic programs _____
Vocational/Technical programs _____
Developmental Studies programs (If applicable)_____

College Major Fields Corresponding to Each of Six Personal Orientations [1]

Orientation	Description (from Holland, 1961)	Relevant major fields
Realistic	"masculine, physically strong, unsociable, aggressive... prefers concrete to abstract"	agriculture, agricultural education, physical education, recreation, industrial arts, engineering, forestry, trade, and industry
Intellectual	"task-oriented, intraceptive, asocial, prefers to think through rather than act out; needs to understand"	architecture, biological sciences, geography, medical technology, pharmacy, mathematics, philosophy, physical sciences, anthropology
Social	"sociable, responsible, feminine... needs attention... avoids intellectual problem-solving... orally dependent"	health education, education of exceptional children and mentally retarded, speech correction, education (unclass.), nursing, occupational therapy, physical therapy, scholastic philosophy, social science (general), American civilization, sociology, social work
Conventional	"prefers structured numerical and verbal activities and subordinate roles... conforming ... identifies with power, externals, and status"	accounting, secretarial, business and commercial (general and unclass.), business education, library science, economics
Enterprising	"verbal skills for dominating, selling, leading others... orally agressive"	hotel and restaurant administration, hospital administration, history, international relations, political science, foreign service, industrial relations, public administration
Artistic	"asocial; avoids problems which are highly structured or require gross physical skills... intraceptive... need for individualistic expression"	art education, music education, English and journalism, fine and applied arts (all fields), foreign language and literature (all fields)

[1] Taken from the work of John L. Holland

APPENDIX C

THE ACTION RESEARCH TEAM AT THE COLLEGE OF THE MAINLAND:

PROGRESS REPORT, MAY 1977 TO DECEMBER 1977

The Action Research Team at College of the Mainland: Progress Report, May 1977 to December 1977.

In the Annual Report we summarized the progress of the Action Research Team at College of the Mainland through May of 1977. That summary included comments on the problems faced in forming the team, obtaining skills for good group process, and agreeing on team goals.

The objective which the team agreed to tackle was the problem of the lack of sense of community at the college. The team presumed a lack of a general sense of community on campus, though it presumed its existence in pockets throughout the college. The intent of the team became the formation of more pockets, with the eventual extension through networks to encompass the entire institution.

Sense of community has shown up as a perceived need in campus surveys, workshops, and informal discussions. The ART decided to act initially by beginning a dialogue on sense of community within various campus groups already in existence. The ART did not want to set itself up as the self-appointed leaders of the quest, but rather preferred to expand the exploration of the problem to the population of the campus. With this goal in mind, the group began to seek visibility. An article on the ART appeared in the Phoenix (Educational Development Services Newsletter) and team members initiated conversation on the subject with other members of the college community informally, in staff meetings, and in discussion with their supervisors.

Following this initial step was a plan for data collection. Random persons from the various employment categories were selected for inter-

viewing. The interview questions were:

1. What would you do differently if this campus had a sense of community?
2. To what extent do we have or not have a sense of community?
3. What things would you do to encourage the sense of community?
4. What three things are being done now that most encourage your sense of community?
5. What three things are being done now that discourage your sense of community?

The intent was to uncover data and influence opinion.

During the Summer of 1977 the interviews were undertaken by ART members with the following persons:

-- two members of top management
-- four members of middle management
-- four staff members
-- eight faculty members
-- four secretarial/clerical persons
-- five maintenance staff

After completing some of the interviewing the team members expressed a need for additional training in consulting skills. They wished to increase their impact in acting as internal process agents for change in promoting a greater sense of community. The interviews uncovered areas of need felt around the campus. One recurrent theme related to the lack of ability felt by employees to initiate changes within the system. Employees at various levels felt somewhat powerless about their abilities

to bring about needed change at the college. The results of the interviewing process are at this point somewhat unintegrated, although results have been made available to the ART members.

In addition to the interviewing activity, the ART has also taken steps to provide the college with a more refined vehicle for responsiveness. The team participated in staff development days in August of 1977. They sponsored a session to acquaint other members of the college community with their function. As a result of this meeting the team got five new members.

Early in the Fall, 1977, the President of College of the Mainland asked the ART to take on the task of examining employee satisfaction at the College. After discussion of this task the team has contacted one of the college instructors in management concerning methods of measuring and quantifying the concept of employee satisfaction. The team also has proposed examining data related to vacation and sick leave usage, employee turnover, and the discrepancies between employee perceptions of how the college is now and how they would like it to be in order to arrive at some other gauge of employee satisfaction.

The ART has also progressed in its skill building. As the team involves itself in different activities it repeats the process of planning, data gathering, studying, and intervening. The means of meeting the needs expressed by the team has remained flexible. When the group had an influx of five new members, the process skills learned earlier by older members needed sharing. Continual participation in training

experiences has become the norm for the ART. One spin-off from the current team has been the formation of a Human Relations Resource Group. This group hopes to live up to its name by coordinating the campus community's desires for skills with local and sponsored expertise in human relations training.

Other persons involved in campus "development" activities have become aware of the ART as an effective process tool for bringing about change. A faculty member functioning as a resource for instructional improvement has contacted the team about setting up her own resource group around the same concept.

The team has also been professionally useful to its members. Not only have they had opportunities to develop new skills and participate in training, but members feel more informed about the organization as a whole. Their increased capabilities and knowledge earns the respect of their respective department heads.

The legitimacy, sphere of activity, and size of the ART are growing. The team acts as a mechanism for making the college more responsive to its internal needs, desires, resources, and abilities. It functions as a means of sharing and growing for college personnel that can be tailored to meet real needs through the gathering of data (research) and action taking. The content of issues attacked can vary, as the mechanism itself is responsive.

The team is a concept which builds in high impact at low cost. The group meets on in-service days or before work, eliminating the need for released time. Members have been able to sponsor the team by using

individual discretionary funds to meet the few expenses incurred. Funding for the team itself has not been necessary.

At the minimum, the ART hopes to make information available. At the maximum, it is able to intervene effectively to meet expressed college needs. Because of constant monitoring and evaluation of any action plans, the team will be able to refine and modify its attempts until the proper solution to a problem is found. The power of this unfunded, multi-representative team will come from their own internal and external responsiveness. They have intentionally attempted to create a unified group with good skills at sharing and trusting. The resulting available knowledge base will provide the power necessary to intervene effectively and continually at the College of the Mainland.

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